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CANADA'S CONVERSATION ♡

SEPTEMBER/OCTOBER 2020 • THEWALRUS.CA

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RESTAURANTS**

**HOW BLACK
WOMEN BUILT
A BETTER
ECONOMY**

**HAS COVID-19
CHANGED
CANADA
FOREVER?**

**INVASION OF
THE TICKS**

**THE
CASE FOR
ABOLISHING
PRISONS**

**FINDING HOPE
IN *THE LORD
OF THE RINGS***





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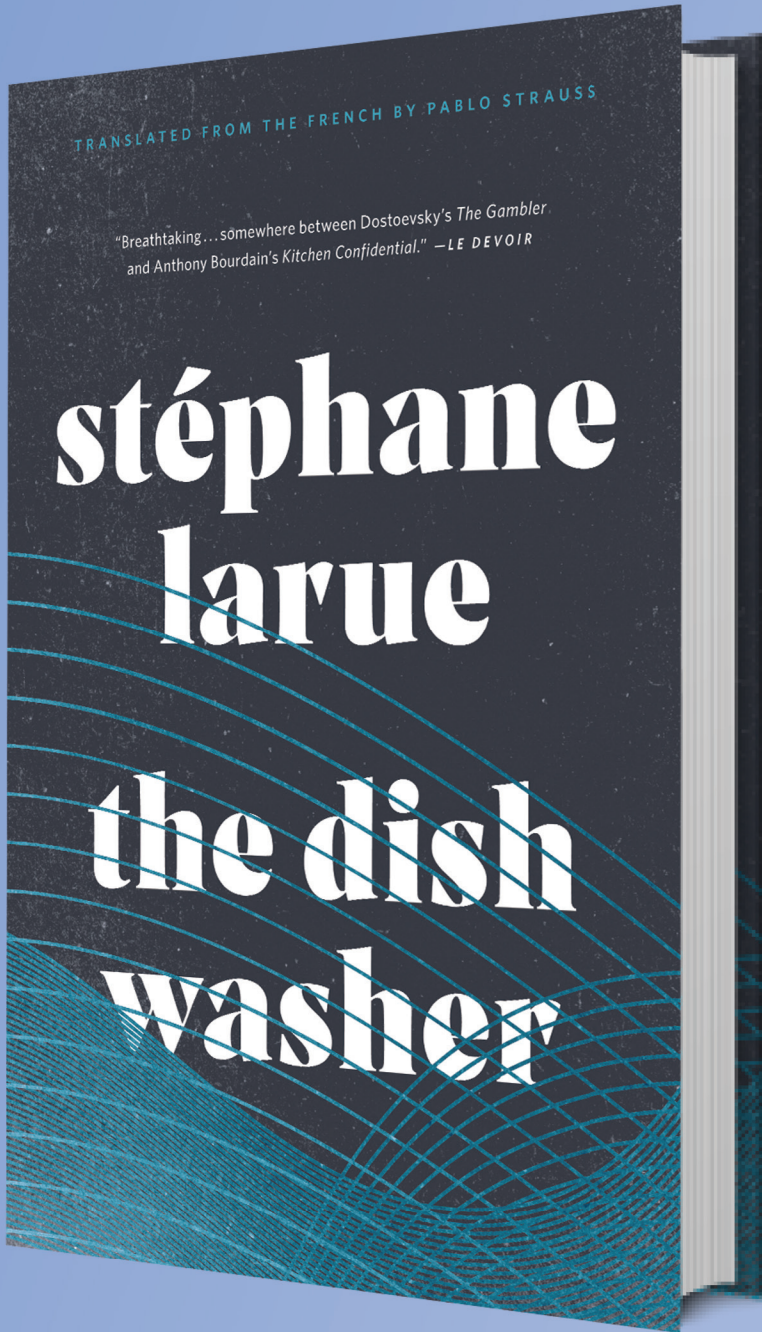
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TRANSLATED FROM THE FRENCH BY PABLO STRAUSS

"Breathtaking... somewhere between Dostoevsky's *The Gambler*
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larue

the dish
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Congratulations to the winner of the CJF-Facebook Journalism Project News Literacy Award



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FAKE NEWS**



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DÉSINFORMATION**



**FÉDÉRATION
PROFESSIONNELLE
DES JOURNALISTES
DU QUÉBEC**

The Montreal non-profit organization is recognized for launching its *#30secondes avant d'y croire* project (*#30seconds to Check it Out*), a program that aims to educate students about misinformation and the importance of credible sources. The project expanded its reach last year to post-secondary students, focusing on political misinformation.

The 3rd annual CJF-Facebook Journalism Project News Literacy Award celebrates journalistic efforts that encourage Canadians to better understand and assess the quality of news they consume, and includes a \$10,000 prize. *#30secondes avant d'y croire* is supported by the Government of Canada and le Ministère de l'éducation du Québec. Past recipients of the award include Agence Science-Press (2019) and Radio-Canada (2018).

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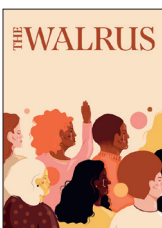
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Alexis Eke is an illustrator and designer based in Toronto. Her clients include the *Globe and Mail*, the NBA, and Air Jordan.

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Editor's Letter

A NEWSROOM in the aftermath of a breaking news event can look unnaturally calm: rows of desks, their occupants bent over their work, trying to make sense of what doesn't make sense yet. But there has been little precedent for covering something like the COVID-19 pandemic, which has disrupted the very way we work. At The Walrus, dozens of impromptu conversations that typically take place among the editorial staff throughout the day have been commuted to instant messaging and structured, almost awkwardly formal, digital "check-ins."

Trapped in our homes amid anxious pets, busy spouses, and stir-crazy kids, my colleagues and I have begun to admit to sleeplessness and an overall sense of uncertainty. Much has been made of the ways the pandemic has disrupted how we work, shop, go to school, see our families, and more—but perhaps one of the unanticipated effects we're just starting to acknowledge is how much and how quickly society is permanently changing. As the adrenalin rush of the pandemic's first few months begins to wear off, our resilience in dealing with new kinds of pressure is starting to wear down. But I've also noticed that people are confronting areas of disagreement and communicating about them in a more open and honest way than ever before.

My colleagues and I have been having lengthy discussions about racism in response to events like the killing of George Floyd, in Minnesota, and continuing conversations about anti-Black and anti-Indigenous violence in Canada. This has included taking a hard look at how many writers and artists of colour regularly



contribute to our pages and the kinds of assignments they receive. (For instance: Does it routinely fall to journalists of colour to address only diversity issues?) We've also met recently with Canadian Journalists of Colour and the Canadian Association of Black Journalists to talk about how to make The Walrus a better organization.

In a world filled with bad news and late-night social media "doomscrolling," we sought to develop this issue with a focus on helpfulness instead of hand-wringing. "Of Hope and Hobbits," an excerpt from Thomas Homer-Dixon's new book, *Commanding Hope: The Power We Have to Renew a World in Peril*, discusses a relevant aspect of the timeless classic *The Lord of the Rings*—how the heroes draw on their diverse strengths to vanquish a common enemy. Other stories bring historical context to current conditions. Vicky Mochama's essay, "The Giving Economy," looks at the practice of mutual aid, a longstanding tradition in Black communities that some small businesses and

individuals are now trying to implement as a step toward economic recovery. And, in "Tables Turned," Corey Mintz examines the challenges imposed on Canada's multi-billion-dollar restaurant industry in a pandemic period, providing insights into what the future of dining out could be.

You'll notice that this double issue is bigger than most of our print editions. As the pandemic and its various forms of lockdown continue, we have decided to publish two larger print editions instead of four monthly editions this fall. This will provide some financial relief in the form of lower postage

costs—and allow us to publish almost the same amount of journalism in print.

We're continuing to publish daily online. Over the summer, we launched *Terra Cognita*, a new, Indigenous-led series guest-edited by Robert Jago. His feature on Indigenous innovation in the Americas, "The Hungry People," appears in this issue. The rest of the series can be found at thewalrus.ca/terra-cognita.

Just as it's hard to know how long the changes we're experiencing will be with us, it's equally hard to know how the COVID-19 pandemic and its myriad social and economic disruptions will be interpreted through the lens of history. If anything, the past few months have drawn attention to marginalized members of our society, such as the elderly, essential workers, and low-income families. In doing so, they've also drawn attention to so many things from the "before time" that didn't work. Our hope is that, through journalism and art that document society's current upheavals, we'll emerge from this time into a better world. 🌍

—Jessica Johnson

Contributors' Notes



ALEXIS EKE
Cover illustration

“Illustrating this cover was interesting because I’ve never had to create so many faces in one piece. When people look at a portrait, they’re seeing it with their eyes, and if the work looks as real as their own pair, it’s easier for them to really notice the emotions behind it. There are a lot of tiny components that need to come together to make eyes look real. The most important one, I think, is the eyelashes. If those are wrong, everything is wrong.”

Alexis Eke is an illustrator and designer based in Toronto. Her clients include the Globe and Mail, the NBA, and Air Jordan.



VICKY MOCHAMA
“The Giving Economy,” p. 23

“Mutual aid is something I’ve always known about. My mom and her friends would get together, especially when we moved to Canada from Kenya, to pool resources somehow. Everyone

was a young African immigrant with not a lot of money, but they made things happen. That’s the basis of my understanding of how Black women survive, and it’s why I wanted to write this piece now, about how we do it and the systems of resilience that we have.”

Vicky Mochama has written for the Toronto Star, the Globe and Mail, the Guardian, and the Washington Post.



ROBERT JAGO
“The Hungry People,” p. 68

“My original conception for this story was a video of a dinner party with dishes made entirely from ingredients indigenous to the Americas. I thought it would

be a good jumping-off point for a discussion. But, COVID-19. My wife and I had put together a whole menu. After Aztec appetizers, we’d move on to a spaghetti arrabbiata made with corn pasta and fresh tomatoes, spiced with chilies, local herbs, and avocado oil. We’d have an India-‘Indian’-inspired turkey dish. We’d finish with a strawberry-topped mousse made with avocado, cocoa, and agave syrup, which sounds weird but is rich and very sweet.”

Robert Jago is an entrepreneur, an occasional writer, and a member of the Kwantlen First Nation and Nooksack Indian Tribe. He is also the editor of Terra Cognita (thewalrus.ca/terra-cognita), a new Indigenous storytelling project.



STEPHANIE NOLEN
“Tick Tock,” p. 46

“I was reluctant at first to offer the world yet another story about ticks and Lyme disease. But, as I began to realize how many other pathogens

ticks in Canada can carry, this feature got a lot more interesting. The more revolting facts I learned, the more horrifying the details, the more exciting it became to write. In this year of all years, when it’s so important for people to get outdoors to maintain their sanity, it matters more than ever—people need to know what’s in ticks.”

Stephanie Nolen is an eight-time National Newspaper Award winner with expertise in international human rights and public health issues.



THOMAS HOMER-DIXON
“Of Hope and Hobbits,” p. 62

“J.R.R. Tolkien has many lessons for us. In *The Lord of the Rings*, sometimes things seem completely hopeless, as if there’s no way out. But the characters do find a way out, and I think there’s

a reasonable chance that we’ll find a way out of our current crises, such as climate change. I can’t tell my kids a story with a happy ending, but I can tell them a story where they will have fulfilling and meaningful lives, and it will be an exciting and challenging adventure because there will be so much on the line this century.”

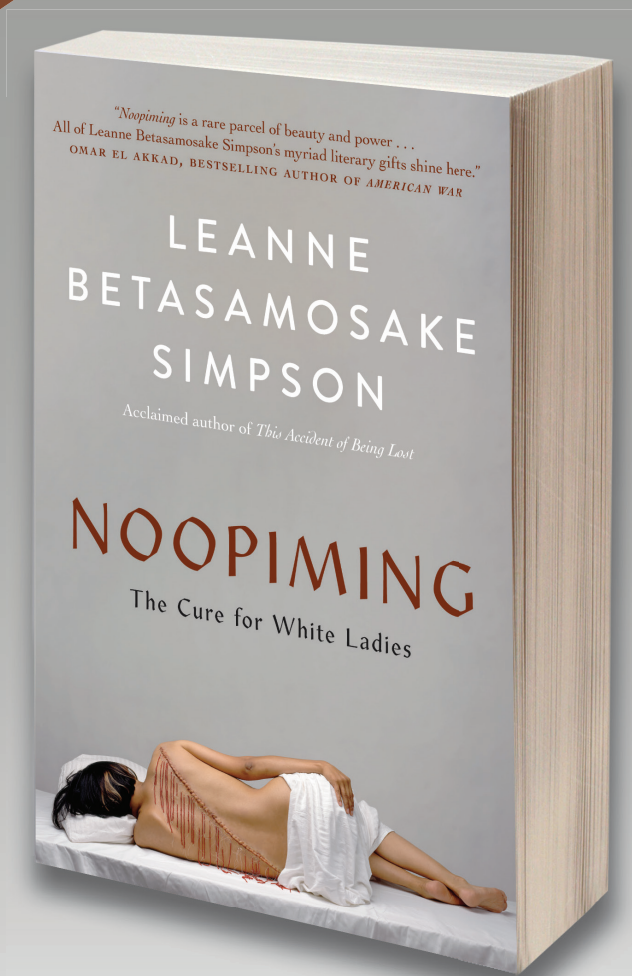
Thomas Homer-Dixon is a political scientist, professor, and author. His most recent book, Commanding Hope, is out in September.

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— Dionne Brand, award-winning author of *Theory*

“I am in awe of Leanne Betasamosake Simpson, **prolific in every way.**”

— Katherena Vermette, bestselling author of *The Break*



ANANSI

Letters



CLOSE TO HOME

In “Point of No Return” (June), Carolyn Thompson does a commendable job highlighting the devastating impact of climate change on pastoralists in the Horn of Africa. I grew up in East Africa and have long known

that displacement in the region is connected to climate change. The area experiences perennial droughts and floods, causing famines and destabilizing governments, and many people who flee to other countries are both unable to return home and unable to build new lives—the essence of being stranded. Thompson also lays bare the profound injustice of the situation: poor countries shoulder most of the burden of hosting displaced people while rich countries, like Canada, are those most complicit in the climate crisis. I believe Canada has both a legal and a moral obligation to accept climate refugees. The world must act collectively and decisively to tackle climate change, hunger, and conflict, all of which continue to cause human displacement and misery.

Stephen Kaduuli
Citizens for Public Justice
Ottawa, ON

BLOWN AWAY

Elizabeth Howell’s article “Alone in the Universe” (June) draws parallels between pandemic isolation and the loneliness experienced by astronauts in outer space. But there is another group of people who voluntarily isolate themselves in stressful situations for extended periods of time: long-distance sailors. From 1968, the stories of two individuals make for an interesting case study: Robin Knox-Johnston circumnavigated the globe, alone, in 312 days, returning to Britain startlingly “normal.” By contrast, Donald Crowhurst, who was competing in the same race, succumbed to the psychological pressure and, leaving behind a logbook that charts his unravelling, disappeared in an apparent suicide somewhere in the Atlantic. Comparatively, my own COVID-19 confinement to a 1,200-square-foot home, complete with television, food deliveries, and friends a Zoom call away, is—pun intended—a breeze.

Nick Coghlan
Salt Spring Island, BC

TRADE OFF

Derek H. Burney and Fen Osler Hampson’s analysis of China’s international trade makes for a great article (“Can We Repair Canada’s Trade Relationship with China?” *thewalrus.ca*), but I disagree that Canada can have it both ways: unless China’s ruling class fundamentally changes its behaviour, we can’t have profitable trade relations without compromising our values—as Australia, New Zealand, and the UK are learning the hard way. Canada needs to drop the Eurocentric thinking and better understand Asia, which is far larger than just China. We can’t afford to let our trade relationships with nations like Japan, South Korea, Vietnam, and Malaysia languish: these countries are becoming huge markets and manufacturing powerhouses. Rebalancing our approach by focusing on Asian economic alliances beyond China would serve us well in the years to come.

Eric Wu
Barrie, ON

DOLLARS AND SENSE

In Max Fawcett’s article “How Universal Basic Income Will Save the Economy” (*thewalrus.ca*), the ideas of an income-tested basic income guarantee and a universal basic income (UBI) are repeatedly conflated. This seems to reflect a common misunderstanding of what “universal” means when referring to basic income. For example, the Ontario pilot was not really an experiment in UBI—the more money participants earned from employment, the less they received from the program. A truly universal program would give a set amount to everyone, regardless of their earnings or needs, which would likely make such a program costly and would almost certainly result in the amount offered being too small to support the most marginalized. I urge everyone to be

careful what language we use to discuss these potential policies.

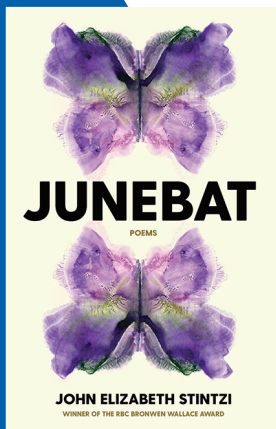
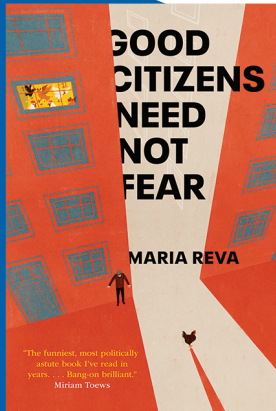
Elisha Rubacha
Peterborough, ON

TUSK, TUSK

In the July/August issue, the article “How to Lift a Lockdown” stated that an antibody test with 100 percent sensitivity means that every positive is a true positive. In fact, the test could provide a false positive, although it will not provide a false negative. The Walrus regrets the error.

.....
 “The time has come,” The Walrus said, “to talk of many things.” Send us a letter, email (letters@thewalrus.ca), or tweet, or post on our Facebook page. Comments may be published in any medium and edited for length, clarity, and accuracy.

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Playing a Role in a Writer's Story

For more than 20 years, the [RBC Bronwen Wallace Award for Emerging Writers](#) has been identifying Canada's brightest young literary talents and helping them transition to professional careers.

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Photo by N. Dunham

HEALTH

How Pandemics Shape History

*The 1918 Spanish flu changed Canada permanently.
Will COVID-19 do the same?*

BY SIMON LEWSEN



IN THE FALL OF 1918, the Canadian army began rounding up soldiers at camps in the Maritimes, Quebec, and Ontario. The troops were to join an international coalition to intervene in the Russian Civil War and defend Western liberalism against Bolshevik socialism. Needless to say, the operation failed to reverse the Soviet Revolution, but it succeeded in bringing a second wave of Spanish flu to central and western Canada.

In his groundbreaking 2013 book, *The Last Plague*, Mark Osborne Humphries charts the cursed journey of the Ocean Limited train, which pulled out of Halifax on September 27, 1918, its cars packed with recruits. The men were to be carried to Victoria, where they would board Siberia-bound ships. Some had been exposed to the flu in Sydney, Nova

Scotia, and once the train reached Moncton, several were visibly ill. In Montreal, two of the sickest were carried off to the hospital; in their place, forty-two new soldiers got on.

The Ocean Limited and two similar troop trains continued their journey, picking up men, exposing them to the virus, and depositing the infected in cities across the country—Toronto, Winnipeg, Calgary, Vancouver. Because the mission was secret, local public health authorities weren't warned of the trains' arrivals. Soon, cities were inundated: an outbreak in eastern and central Canada had been transformed into a country-wide crisis.

The Ocean Limited episode helps explain why, once the pandemic subsided, Canadians got angry. The war had brought an upswing in patriotism, but

as the conflict wound down and reports about the deadly operation circulated, citizens realized the state had not only failed to protect them from the virus but had negligently and cavalierly spread it. They expressed their displeasure through electoral revolts and citywide strikes.

This isn't surprising. Plagues often bring social turmoil. In fourteenth-century England, the Black Death wiped out between 30 and 60 percent of the population, creating labour shortages among peasants, who used their newfound leverage to win higher wages

LEFT Newspaper carriers for the *Manitoba Free Press* wore surgical masks in 1918 to protect themselves from the Spanish flu.

and the right to own land. Disease outbreaks also magnify inequality, making the poor poorer, the sick sicker, and the angry angrier. In 1832, cholera—an

illness that disproportionately affected working class people—ravaged Great Britain and Ireland, fomenting class resentment and ultimately riots in Liverpool, Aberdeen, Glasgow, and Dublin. And, in the 1980s, AIDS decimated Haiti's tourist economy, deepening poverty and leading to the uprising that toppled the dictator Jean-Claude Duvalier.

COVID-19 has reminded us that plagues shake things up. In Lebanon, where uprisings over corruption and economic mismanagement were under way prior to the outbreak, protests have been reinvigorated, this time with more violence. Merchants in Wuhan, China, have staged sit-ins in anger at having to pay rent for shuttered business properties. Hundreds of migrant workers in Mumbai have stormed a railway station in opposition to lockdown orders that prevented them from returning home. And, in poor suburbs across Paris, residents—angry at the heavy-handed police tactics used to enforce lockdowns—have torched vehicles and lobbed projectiles at cops.

Much as they infect the body, pandemics infect the body politic. They move through our social systems, finding vulnerabilities to exploit. In the process, they lay bare those vulnerabilities to scrutiny—and afford opportunities for

self-reflection. The Spanish flu brought a reckoning and, in time, made Canada a better country. COVID-19 could do the same.

THERE ARE few moments in Canadian history when the federal government was more powerful than it was in 1918. Prime Minister Robert Borden, a Conservative, increased his majority when many opposition Liberals joined him in support of his conscription policy. As the Borden government ballooned in size—hiking taxes, nationalizing rail services, and expropriating power generators—its leaders justified the expansion not only as a necessary war measure but as a means of improving social welfare. Voters expected their government to bring education, health care, and urban sanitation to those who needed it.

The flu, however, forced them to confront the gap between such lofty aspirations and grim reality. For the most part, citizens had accepted battlefield casualties as the necessary cost of war. But the influenza deaths now happening in overcrowded army barracks and infirmaries were less ennobling. If it was difficult, after the Ocean Limited debacle, for people to view the army as a public-spirited institution—the *Edmonton Bulletin* decried the “criminal negligence” of military authorities—it became impossible for them to kid themselves about the kind of society their ruling class was building. Public health officials and volunteers were shocked by what they saw in the urban slums: people huddled in sunless, subterranean squalor and, in one case, sick children sleeping in beds where family members had recently died. In poor neighbourhoods, the flu could be twice as deadly as in affluent precincts, and on First Nations reserves, it was five times more lethal than in the country at large.

Such revelations were bound to have political consequences. When Borden resigned, in 1920, he left a party destined for the opposition benches for most of the next four decades. The antimilitary backlash contributed to the resurgence of the pacifist movement, and the flu

galvanized Indigenous activists, creating profound doubts about the effectiveness of settler medicine and the benevolence of state institutions. It’s surely no coincidence that the League of Indians of Canada—a forerunner to the contemporary Assembly of First Nations—was founded in September 1919 with a statement that included demands for better health conditions on reserves.

Equally consequential was the spate of workers’ revolts across the country. Eshyllt Jones, a labour historian, argues that the pandemic created a sense of aggrieved class solidarity, leading to the famous Winnipeg General Strike of 1919. It isn’t hard to see where such resentment came from. Winnipeg hospitals subjected patients to patronizing questionnaires to assess their ability to pay, a practice that discouraged the poor from showing up at all. Municipal bans on billiards clubs, cinemas, and union halls, enacted in the name of social distancing, seemed pointedly classist, particularly since shops, restaurants, and hotels stayed open. And, because of price gouging among undertakers, grieving workers had to choose between sacrificing months of wages or consigning loved ones to degrading paupers’ funerals provided by the city, which occasionally misplaced the bodies it was supposed to inter. When, in spring, Winnipeggers stormed the streets, derailing trolleys and braving police gunfire—and setting off solidarity strikes from Victoria to Amherst—the humiliations of the pandemic were fresh in their minds.

The 1919 workers’ shutdowns are often credited with politicizing a new generation of labour activists and making social democracy a potent force in Canadian life. Less discussed is the role labour played in reforming public health. Spurred by the pandemic, the newly energized labour press—along with women’s movements and national elites, like writer Stephen Leacock and prime-minister-in-waiting William Lyon Mackenzie King—called for a centralized health bureaucracy that might prevent catastrophes like the Ocean Limited. In 1919, the federal government founded the Department of Health to provide a coordinated response to the next

outbreak. But the office kept growing. Soon, it was assisting with food-safety inspections, enforcing sanitation on trains and steamships, operating a network of free clinics, and providing mass vaccinations against diphtheria, smallpox, and scarlet fever. Universal health care wouldn’t arrive until the ’60s, but these earlier developments were important steps in that direction.

In crucial ways, Canada became a better place—more activist, less militarized, with greater political diversity and a larger role for the state in maintaining social welfare. To that end, few national institutions would prove as vital as the new Department of Health (later renamed Health Canada), which went on to combat polio in 1953, H2N2 in 1957, SARS in 2003, and H1N1 in 2009—keeping rates of infection and death well below what they would otherwise have been.

WHICH BRINGS US to the present. Today, federal power isn’t as consolidated as it was during the First World War, the social safety net is more robust, and trust in government remains, for the moment, high. Yet there are uncanny parallels to the crisis of 102 years ago. In some communities, COVID-19 is an inconvenience. In others, it’s a source of grotesque suffering—the kind people aren’t supposed to experience in a prosperous democracy.

We’ve learned, for instance, that in long-term-care centres, where more than 80 percent of COVID-19 deaths have occurred, people often sleep two or three to a room, and the ratio of patients to workers can be as stark as sixty to one. We’ve learned that Canadian jails, while outfitted with the trappings of modernity—electromechanical locks, digital surveillance cameras—are not designed to achieve anything like modern sanitation standards. (More than half of the inmates at the Joliette Institution, in Quebec, and more than a third at the medium-security wing of the Mission Institution, in British Columbia, have tested positive for the virus.)

We’ve also learned that, in Toronto, the neighbourhoods hardest hit by COVID-19 are those where high numbers

of Black Canadians reside. We've learned that, in some Indigenous communities—like the Dene village of La Loche, Saskatchewan, which has seen more than 150 infections—the risk of illness is exacerbated by housing shortages, overcrowding, and limited access to potable water. And we've learned that the urban shelter system—our society's cut-rate response to the post-1980 surge in homelessness—barely provides adequate shelter at all. Many such facilities resemble the ad hoc havens that spring up after natural disasters: gyms with mattresses spaced seventy-five centimetres apart. (Toronto's Willowdale Welcome Shelter, which houses refugees, has had over 180 infections.)

The politics of the pandemic have become the politics of everything. Labour organizers bearing megaphones have descended on the Cargill abattoir in High River, Alberta, where nearly 1,000 low-wage workers have fallen sick. At the Saskatchewan Penitentiary, in Prince Albert, prisoners carried out a civil-disobedience campaign in response to lockdowns that confined them to cells twenty hours a day. On April 9, outside the Bradford Valley Care Centre, in southern Ontario, staff members held signs emblazoned with a short plea: "HELP US." And country-wide protests in solidarity with George Floyd, killed in late May by a police officer in Minneapolis, have drawn attention to the social maladies—poverty, violent policing, unequal access to health resources—that make life dangerous for Black Canadians.

The most contentious social questions will surely work their way through the courts. The Canadian Civil Liberties Association recently filed a lawsuit against the City of Toronto, alleging that conditions in homeless shelters violate citizens' Charter rights to life and security. So far, nineteen COVID-19-related class-action suits have been launched in Canada, and these are only the first drops in what will likely be a torrent of litigation. To read the court documents

related to shelters and nursing homes is to get a window into a world of pain, anguish, and rage. The statement of claim in a proposed class-action suit against an Ontario-based long-term-care provider lays out harrowing circumstances: patients who were confined in their rooms for days as their peers died around them, families who found out that loved ones had contracted the virus only when they were issued death certificates.

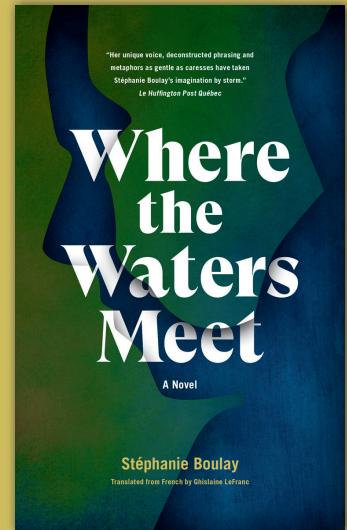
Over the last few months, Canadians have had the unpleasant experience of looking more closely at their country than they might have wanted to. Plagues have that effect. But, if they reveal uncomfortable truths, they also provide an opportunity to respond. The recent Canadian Emergency Response Benefit in some ways resembles a guaranteed-minimum-income program: it offers no-fuss cash transfers to

people in need. In several provinces, the justice system has released inmates through early discharges, passes, and generous bail conditions: such interventions constitute a kind of short-term prison-reform initiative, which could pave the way for permanent changes. And, by making belated efforts to move some shelter residents into single-unit dwellings (often vacant hotels), local governments have accomplished, on a small scale, what housing-first activists have been demanding countrywide: a top-down campaign to give homeless people homes.

As in 1918, a virus is showing not only where the nation is broken but how it might be fixed. The pandemic has "compelled us to see our weakness through tears and sorrow," reads an op-ed from the *Alberta Non-Partisan*. "The old way of dealing with the matter of public health can no longer be tolerated." These lines are from 1918. They could've been written today. 📖

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SIMON LEWSEN, a Toronto-based writer, contributes to *Azure*, *Precedent*, *enRoute*, the *Globe and Mail*, and *The Atlantic*. In 2020, he won a National Magazine Award.

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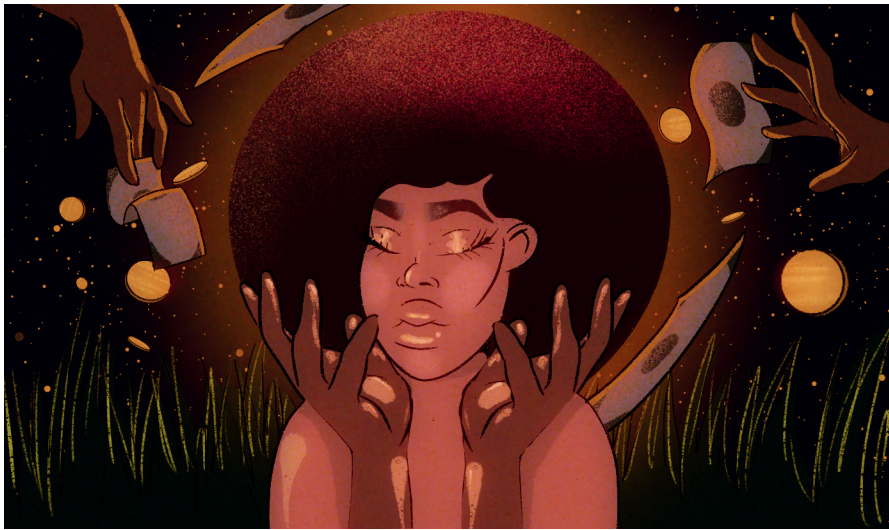
SOCIETY

The Giving Economy

A short history of Black communities and mutual-aid groups

BY VICKY MOCHAMA

ILLUSTRATION BY BLACKPOWERBARBIE



THERE AREN'T, compared to Ontario and Quebec, that many Black people in British Columbia: less than one-tenth of the overall Black Canadian population. But, when troubles—like, for instance, a global health crisis—strike, official numbers don't matter. An ongoing calamity—anti-Black racism—becomes an acute emergency. So, as COVID-19 began to take hold, a group of activists and organizers did something that, for Black folks, is as old as time: they started a mutual-aid group.

“Our community members are likely to be found in the blind spots of the [federal] agencies that are giving out the money,” says Kevonnie Whyte, one of the group's organizers. The money the group has collected has gone to Black migrants without permanent residency, Black students stuck in Canada on visas that limit their ability to work, and Black people trapped in the rinse cycle of the

gig economy—taxi drivers, delivery couriers, cleaners, and dog walkers. The premise of the fund is simple: for the duration of the pandemic, any Black person in BC can apply to get \$150 to use for whatever they need. The fund prioritizes Black people who, for whatever reason, don't get access to government supports like the Canada Emergency Response Benefit.

In the dawning days of the pandemic, when people were stress-baking and becoming amateur epidemiologists, grassroots organizations and ad hoc community efforts sprang up all over. A group of young women in Boston started a mutual-aid drive to get help—cash, food, assistance—to the vulnerable in their community. Students at Pittsburgh's Carnegie Mellon University started spreadsheets to help people cover basic expenses. You could give your cash to a GoFundMe for Canadian movie-theatre workers. The Toronto

chapter of Black Lives Matter launched a mutual-aid fund for the city's Black community. Someone started a Google Doc to keep a running list of fundraisers to support sex workers all over the world. And, by late May, Whyte says, the Black in BC Mutual Aid collective had raised nearly \$20,000 and had disbursed three-quarters of that to over 100 people. Thinking back on it, she laughs. “We were proud of that.”

Then, in June, everything changed. In the aftermath of the killing of George Floyd, the group received an astounding influx of donations, quintupling their fund in ten days to over \$100,000; by early July, they had topped \$170,000. “It's unfortunate that death and police brutality... are what motivated people to contribute to our fund,” Whyte says. “But, at the same time, the contributions are happening. It's a mix of feelings.”

And that, in a way, is a capsule history of mutual aid. Whyte and her co-organizers in BC saw a coming danger for Black people and proactively created a community network to head off some of the worst effects; others noticed how dangerous the world is for Black people after it was too late and well after Black people had already started helping themselves. Over decades and centuries, mutual aid has helped people pay rent, buy groceries, and acquire medicine; it has given workers something where there is so much nothing to be had, and it has given luckier people a way to help out in desperate times.

So why weren't we doing mutual aid before—everybody, all the time? Well, Black people were.

MUTUAL AID is not new. It's a long-standing practice of Black communities. “Mutual aid is just something that we've always done,” says Caroline Shenaz Hossein, a professor in York University's social science department. “Crowdfunding, the sharing economy—I mean, these are all these nicknames that white people come up with to make it look like it's new, and it's never new.”

In the late aughts, Hossein's research took her to the Caribbean, where she met

the “banker ladies”: women who ran and participated in money pools. Money pools are deeply familiar to many people from Black diasporas. Your moms and aunties get together, they cackle loudly for a couple of hours, and later, your mother says not to worry, you will be going to university. There’s a magical quality, money appearing as if from nowhere.

Depending on where you’re from and who invited you in, the pools have different names: *sol* (Haiti), *susu* (Ghana), *box hand* (Guyana), *jama* (Kenya), *hagbad* (Somalia). There are cultural nuances in how you get into one, and the amounts may range, but the principle is almost universally the same—you get out what you put in. A typical arrangement might look like this: ten women decide to each contribute \$30 a month to a pool, and they each get their turn receiving money from the pool—a \$300 cash injection when they do. What enslaved people in Haiti and elsewhere knew is not too distant from the wisdom of Somali mothers and Grenadian aunties: if everyone gives, everyone gets.

The money, as useful as money can be, is almost beside the point. Mutual aid is a reciprocal experience; once welcomed, you’re now in a community of giving, with all the joys and burdens that entails. For Ginelle Skerritt, the executive director of the Warden Woods Community Centre, in Toronto, joining her mother and aunts in their *susu* as a young person meant more than having some extra money for school. “I felt like I was a woman; I felt like I was doing things that big people do,” she says.

Skerritt now runs a *susu* network with different groups of varying levels of investment and community interaction—a recent return to the world of money pools after running one in the 1990s. (Though the principles have stayed the same, the technology has changed: when she ran her first one, the members gave cheques; now, it’s all done via e-transfer.) The infusion of money from that first family-based *susu* helped pay off her student loans. “That doesn’t sound too terribly sexy,” she says, “but it was such a relief. It paved the way for me to be able to do other things with money in my thirties.”

IN 1932, at the height of the Great Depression, Black people in Gary, Indiana, developed a local economy through mutual aid. “The last bank had just pulled out of their neighbourhood. Everybody was unemployed,” says political economist Jessica Gordon-Nembhard. The way she tells it, they didn’t know exactly what to do. Maybe, they thought, we could start a co-op for groceries or just to share what little we do have. Twenty African American families joined a study group; for a year and a half, they met monthly to talk and plan, chaired by a local high school teacher, Jacob L. Reddix, with a passion for cooperative economics. (A cooperative economy is one in which “most of the economic activity is organized around cooperative ownership...in a democratic way so that they all participate in decision making about the economic activity,” Gordon-Nembhard explains.)

Eventually, they pooled enough money (\$24 at first) to buy their groceries in bulk. Next came a credit union. Within five years, the area added a gas station and two branches of a co-op grocery store, and at the school, they began to teach a curriculum on cooperative enterprises. In the middle of a depression and despite the continued closure of the steel mills, the Consumer’s Cooperative Trading Company was bringing in \$160,000 (US) in sales and had a membership in the hundreds. The title of their agenda—“A Five Year Plan of Cooperative Action for Lifting the Economic Status of the Negro in Gary”—was precise: in good times and bad, the people must prosper *with* the economy, not after.

In her book *Collective Courage: A History of African American Cooperative Economic Thought and Practice*, Gordon-Nembhard documents how, during slavery, enslaved people would pool their resources to plant and farm gardens, create burial societies, and take care of widows and children. In the years after slavery was abolished, mutual-aid groups would work together to build wealth by pooling resources to buy tractors, land, and feed. In Tennessee, the Nashoba Commune (founded in 1825) brought Black people in the United States together in the pursuit of literal freedom;

a century later, groups like the Depression-era People’s Consumer Cooperative did the same in pursuit of economic equity.

Contemporary money pools are part of this long legacy of collaborative financial planning and support. “It’s really a savings vehicle,” says Skerritt of the *susu* network she runs. She asks the members to share through email what they’re saving for so they can help one another meet their goals; a donation option allows members to contribute a portion of the money they put into the pool to charity. “There’s also been talk about using it to launch ideas around buying property together or investing in real estate together.”

Regardless of what they decide, she says, the goal is the talking, which builds trust and helps dispel trepidation about managing finances. Cooperative economics invests trust in people through time and conversation and sharing instead of through cash and credit. “The Underground Railroad was a cooperative movement,” says Hossein. “That was a network of people coming together through mutual aid.” Its informality was built-in: it was too dangerous to talk about, let alone formalize. Who would—or even could—go to a bank to say, “I’d like to save this money so that I can free some slaves in the morning”?

Who, in this anti-Black world, do you trust?

Hossein says that fear of discovery persists in the money pools that operate today. In the Caribbean, she had no issues when researching box hands, *susos*, and partner banks. But, in Canada, it’s a different story. Some people find that talking about mutual aid is met with suspicion: How can people have money if they are poor? And, if they have so much money, why are they still poor? For others, explaining one’s culture becomes an argument. Better, then, not to talk too much about it. The banker ladies here, she says, “they hide what they do.... They keep these things under wraps.”

IN A 1902 ESSAY, political theorist Pëtr Kropotkin describes embarking on a quest to observe Darwinian competition in a field excursion with a zoologist friend. But what they find is not so much

an endless fight for survival as untold collaboration. From ants to crabs to birds to beetles, Kropotkin sees far less of the heated rivalry for resources he was expecting and instead something rather more cooperative. In the essay, which he titled “Mutual Aid: A Factor of Evolution,” he writes: “Mutual aid within the community, self-devotion grown into a habit, and very often self-sacrifice for the common welfare, are the rule.”

But the behaviour of eagles on a Russian mountainside can't entirely explain why people help one another. Kropotkin understood mutual aid as a global, biological phenomenon strictly for day-to-day survival. But that view limits its political power. In Canada, the liberal Catholic Antigonish movement brought together farmers and fishermen, around kitchen tables in the Atlantic provinces, to help them push back against the expansion of corporate fishing. In Quebec, *caisses populaires* (a form of credit union begun by farmers) are celebrating nearly 120 years of existence.

And yet, despite these well-known examples, there are few banking systems in Canada that recognize the specific ethnic economic activity of mutual aid. My mother's jama, which gives money when Kenyans in Canada have to pay funeral and travel costs back home, had to undertake a labyrinthine process to establish a bank account. First, most banks said no. Then, a bank manager decided that they could qualify as a community group. But, in order to “become” a community group, they had to draft documents—a constitution with bylaws, a board of directors, meeting minutes. The Black culture of survival requires paperwork to be understood. How do you contain decades of community survival in a document that a bank understands?

Some don't. My mother and my aunts are the lucky ones. Hossein has spoken to Somali women who allege they've had their hagbad money taken during police raids of their neighbourhoods. “Because there's no understanding of these women's mutual aid. There's not even an imagination that these women could be pooling honest

money, from driving a bus or cleaning someone's house, to help one another.”

The suggestion of illegality has haunted Black mutual aid going back to fugitive former slaves on the Underground Railroad. The anxiety of being discovered, of hiding what you've earned and given, and of not being understood means few communities want to talk about it, especially communities that are criminalized. It's not just money; it's a practice of trust.

“WHAT'S A FUNERAL without food? And singing? And catching up?” laughs my mother when I tell her she always seemed to be on the way to another late-night funeral party. “There's a lot of partying, depending on whether there's beer. Or it is a Seventh Day Adventist one—then you go with your own wine in a pocket or in a bag.”

When my grandmother passed away, three years ago, my parents held a lightly raucous memorial in their backyard. My many not-quite-related-but-definitely-family aunts and uncles kept asking for supplies. They'd come to commiserate, and they'd also come with cards filled

Thanks for Asking

BY ROXANNA BENNETT

Yes, I have tried cleansing, cutting, bingeing, purging, laughing, grieving, slutty fucking, cardio, physio, detoxing protocols, supplements, surgeries, sedatives, laxatives, antidepressants, antipsychotics, hormones, opioids, & yes turmeric, patience, positivity, CBT, DBT, group, art & music therapy, outpatient, inpatient, sometimes involuntary.

I have “wept & fasted, wept & prayed.”

Yes, I have tried to just get over it, the fragility & pain, I have tried to explain but O god I am tired of the trial, of your questions, of trying to be alive in your world.

with cash. But no envelopes or pens. Of course, I had fresh packs of both on me. I know this process like I know a good cup of tea from Kenya's Kisii Highlands. I am steeped in mutual aid, endlessly warmed by community and reciprocity.

In addition to the cash, the money from my parents' bereavement group helped pay for hospital fees, which, in Kenya, must be paid before a body is released. “We bought the coffin and hired the hearse to take the body home,” says my mom. “Without that money, we would have to be in debt.” My parents are immigrants whose careers started well after their Canadian-born contemporaries'; debt is a fraught burden and savings are thin.

What they have instead—what we have—is a habit formed by time, urgency, community, history, and a need to survive together. If something happens to you, my mom says, you learn that you don't have a preexisting support system here. “You don't have anybody. These are the people in the community who are going to help you out.” ☪

VICKY MOCHAMA is a writer in Toronto.

ENVIRONMENT

Frog Songs

Why citizen scientists are volunteering to listen to amphibians

BY CAITLIN STALL-PAQUET

PHOTOGRAPHY BY JEREMIE STALL-PAQUET



IT'S AN HOUR after sunset, one night in early April, and I'm standing on the side of a dirt road in my hometown of Frelighsburg, Quebec, with my hands cupped around my ears. I'm listening for the calls of anurans—amphibians without a tail, so frogs and toads. I am here, more specifically, to hear the croaks of wood frogs, which are one of the first species to peek their little brown heads out after a long winter of hibernation.

This isn't just recreational listening, mind you—this is also for science. I am a volunteer observer, one of several who are gathering data about dwindling amphibian populations in this region. For the *parcours d'écoute* (“listening pathways”) project I am on, participants each choose a quiet eight-kilometre stretch of road and go out listening along it, noting the frog and toad species they hear and the volume of their calls, returning to record these observations in the same spots once more, later in the season, ideally year after year. It's called the Amphibian Population Monitoring Program, a long-term citizen-research project created in the 1990s by the Saint Lawrence Valley Natural History Society—part of a provincial-government push that came about when the International Union for Conservation of Nature highlighted worldwide declines of amphibian populations.

I make my path along Chemin Pinnacle, at the foot of the mountain of the same

name, stopping at markers every 800 metres and perking up my ears for a three-minute stretch at each one. This road is about three kilometres from the house I grew up in, where my bedroom was next to a pond that resonated with an amphibian chorus through the spring and early summer; on warm nights, I would leave my window open and be lulled to sleep by frog songs.

Though the term “citizen science” is relatively new, the practice of non-scientists gathering data about the natural world is not. Sometimes this has been undertaken by curious individuals: Mary Anning, who had no training, hunted for fossils along the cliffs of Devon, England, in the early nineteenth century and unearthed the first known plesiosaurus skeleton. (She is also believed by many to be the inspiration behind the “She sells seashells by the seashore” tongue twister.) By the early twentieth century, evolving telescope technology allowed the astronomically curious to turn an eye to the sky and gather useful data. But, increasingly, groups have also coalesced to pursue scientific interests. The National Audubon Society founded the Christmas Bird Count in 1900; it is one of the longest-running

There are over a dozen frog species in and around Frelighsburg, Quebec; green frogs, the species pictured here, make distinct croaking sounds.

community science projects in the world. In 1954, a sea turtle survey began on a single beach in Japan; now, about forty beaches across the country host counts. And the University of Cape Town's Animal Demographic Unit established an ongoing project to monitor population dynamics in 1991.

In Canada, the federal government launched its NatureWatch website in 2000, encouraging citizens to monitor all sorts of wild elements, from plants to ice formations to frogs. And, in the last decade, apps like iNaturalist and Merlin and online databases like eButterfly have bolstered community participation in natural sciences by allowing users to easily share their findings about the locations of animals, identification of species, and number of individuals in a sighting. Nearly all of us now own devices that put scores of wildlife information at our fingertips. Databases are growing—in a boon for underfunded scientific communities, findings on apps are shared to data repositories like the Global Biodiversity Information Facility—and long-term monitoring projects made up mainly of volunteers, like the one I am participating in, are gaining popularity.

Nowadays, amateur scientists have extra impetus for heading into the field: studies like the major UN report on biodiversity last year, which warned of unprecedented declines in the natural world and estimated that 1 million plant and



animal species are now at risk of extinction. Increased tracking of these accelerated declines is key to understanding, and hopefully slowing down, what scientists call our planet's ongoing sixth mass extinction. Without filling in our knowledge gaps about the natural world, we can't know what it is we're trying to save.

IN 1968, musician Bernie Krause and his collaborator, Paul Beaver, were contracted by Warner Brothers–Seven Arts to make an album on the theme of ecology. Beaver refused to head out into the wild to capture sounds, but Krause got hooked on the experience. In 1970, he and Beaver released *In A Wild Sanctuary*, the first album ever to use natural soundscapes, and in the years that followed, Krause would help pioneer a new field: soundscape ecology—the study of the sounds of a land- or seascape.

Sound is an important indicator of an environment. “The sounds of the natural world, when they're in a healthy habitat, come across as a kind of orchestration,” Krause, now based in Glen Ellen, California, tells me. “In order for the birds to be heard, they have to stay out of the way of the frogs, out of the way of the insects, and so on....All animals vocalize in a relationship to one another, much like instruments in an orchestra.” He later coined the term *biophony* to describe this effect of the collective sounds of the

creatures in a habitat. To date, Krause has recorded over 1,200 habitats; in the years since he began this work, the sounds in nearly half of them have become compromised or gone silent. At times, Krause has returned to the same spot to capture stark human-caused environmental changes, finding near silence in spaces once loud with birds, frogs, and insects.

Animals make sounds for many reasons: to communicate fear or danger, alert others that they've found food, indicate their availability for mating, or warn another member of the species that they're on their turf, among others. For anurans, vocalizations aren't just about males letting females know they're looking to get busy; they're a form of group self-defence. As the voice of each individual joins in, it becomes harder for predators to distinguish between and locate them. But, when that chorus shrinks or is interrupted by loud human sounds, individuals can be exposed and put at risk.

Growing up, my pond was home to a full chorus. As the sun set in late spring, when all the species had woken up from hibernation and the mating season was at its peak, the backyard and woods became loud with the high-pitched chirp of spring peepers, the continuous trill of grey

treefrogs, and the lower-midrange staccato warble of leopard frogs. I loved the quick overlapping croaks of green frogs, which sound like a cartoon character swallowing hard in an awkward situation. I spent afternoons canoeing around the pond's banks to spot our huge resident bullfrog, who chimed in intermittently

with his bass, cow-like vocalization. (I'm not being sexist with pronouns, to be clear: the majority of anuran songs we hear are males calling to females or protecting their territory.)

Krause wants to get everybody to similarly use their ears. “If [people] listen and they shut the hell up,” he tells me, “they're going to get a different sense of the world very quickly.”

Without learning about the natural world, we can't know what it is we're trying to save.

LAST YEAR, a review published in the journal *Science* detailed global mass amphibian die-offs partly due to the spread of the disease chytridiomycosis, commonly known as chytrid. Caused by a fungus called *Batrachochytrium dendrobatidis*, chytrid is now found in dozens of countries and has caused the presumed extinction of at least ninety amphibian species. (The earliest known case in North America was found in a museum, in the bodies of two green frogs collected in

Saint-Pierre-de-Wakefield, Quebec, in 1961.) The disease has caused the largest number of documented deaths attributable to a single illness in recorded scientific history.

Though devastating, chytrid and other diseases aren't the sole or arguably even the main culprits of amphibian decline: illnesses find opportunity in climate-changed or human-altered habitats. Frog, toad, and salamander populations are often already weakened by displacement (like construction in the marshy wetlands they call home) or irritants (such as chemicals used in farming that act as immunosuppressants). Sara Ashpole, an environmental studies professor at St. Lawrence University, in Canton, New York, estimates that somewhere between 40 and 70 percent of North America's wetlands have degraded or disappeared completely; in and around densely inhabited Canadian centres, that climbs to 98 percent.

In 2017, the World Wildlife Fund (WWF) published the Living Planet Report Canada, detailing population trends for 903 invertebrates, including forty-six species of amphibians and reptiles (a group called herpetofauna), half of which showed signs of decline. The WWF also reported that 42 percent of amphibians had been assessed as at-risk in 2014. According to the International Union for Conservation of Nature, herpetofauna have some of the highest proportions of threatened and "data deficient" species for vertebrates, which means there isn't comprehensive data about baseline populations—the funding to gather the necessary information simply does not exist. Species like these often get overlooked when it comes to the allocating of resources, with money being funnelled toward the cuter, more charismatic megafauna species that pluck at human heartstrings. (I'm looking at you, pandas who are too picky about your mating partners.)

Which brings us back to interested amateurs, standing by roadsides, listening. "If we can establish baseline recordings for any environments that are calibrated to known and repeatable standards," Krause wrote in his 2013 book,

The Great Animal Orchestra, "then the recorded information we gather will represent a collection against which future recordings can be accurately assessed."

FOUR WEEKS LATER, in early May, I head out for another frog encounter. On the drive from Montreal, I play various recordings of local anurans on a loop, like a favourite playlist, via an app called Frog Calls, which is meant to help users identify different species. Though there are more than a dozen living in the area, I'm mostly prepping my ears for the American toad and the spring peeper today—the wood frogs woke up four weeks ago, so they're long past the peak of their croaking.

Before I start the official listening pathway, I go explore the muddy banks of a pond across the street from my best friend's parents' house. The gang is nearly all there, filling their designated positions in the layered amphibian chorus that brings me back to being a kid. Standing between the trees, the trilling peepers are so loud it almost hurts my ears. (Measuring around 2.5 centimetres, peepers are barely bigger than a paperclip, but a group of the little guys can be heard from over three kilometres away.) My friend's father tells me their calls used to be just as deafening even up on their front porch; it doesn't carry quite as far these days. A similar reduction in the intensity of the sounds has been reported by Cree adults in James Bay who remember the loud springs of their childhoods.

For those who have been lucky enough to find themselves in the middle of a full chorus, the loss is a tragedy: that auditory immersion, being surrounded by voices bouncing off water and leaves in the dark, is impossible to reproduce. Ashpole often speaks to young adults whose parents recall catching polliwogs and listening to roaring nighttime ponds; they have never had the same experience. To her, it's imperative to take people into the field to

transmit passion first-hand. Telling me about going out with a group one night, she recalls looking down on the ground "and there were just thousands of little [spadefoot toads], and we couldn't step anywhere.... You expect kids to get really excited, but what I find more exciting is watching adult parents having a child-like moment."

As I stand in the dark and listen intently to the frogs' voices, what is at first chaotic comes into focus, my ears straining to separate the different types of calls. I'm pleasantly surprised by the range of amplification my hands provide as I change their shape around my ears, and I'm starting to understand the distinction that Krause makes between listening and hearing—the difference between engaging with the sense and passively experiencing it. It's a practice that can make us realize

that all is not lost and that the environment can recover if we let it—in his book, Krause points out that there are now choruses of frogs and nightingales thriving at Chernobyl.

We currently find ourselves on the other side of a stark but intangible line created by the climate tipping points we've blown past for and at our leisure, the virulent diseases we've helped spread, and the habitats we've destroyed in the name of peace and quiet. Being on this side of the line is a lot like grieving: we are in an "after" time. Earlier this year, I used the words "we are in the after" in an epilogue to my friend Alexandre Bergeron's music video for "Aquatic Ruin," a song about ecological disaster that ends on a chorus of spring peepers. And, as with other forms of grieving, in times defined by disease and mass extinction, we need to bear witness. We can be quiet and press record to capture what is still there. We can cup our hands around our ears and listen. 🎧

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CAITLIN STALL-PAQUET is a Montreal-based writer whose work has appeared in *Elle Canada*, the *Globe and Mail*, *enRoute*, and *Xtra*.

"The sounds of the natural world come across as a kind of orchestration."

Community-led water monitoring is yielding critical baseline data in the newly established Ts'udé Nijiné Tuyeta protected area in the Sahtu Region of the Northwest Territories.



PHOTO: KIRSTY GURNEY

New Wave

DataStream is a website designed to promote collaboration in water stewardship. Across Canada, monitoring groups are using the technology to share information about freshwater health

BY STACY LEE KONG

If you're a resident of Saint John, New Brunswick, and have ever worried about the water in your neighbourhood, you've probably chatted with Graeme Stewart-Robinson, executive director of Atlantic Coastal Action Program (ACAP) Saint John.

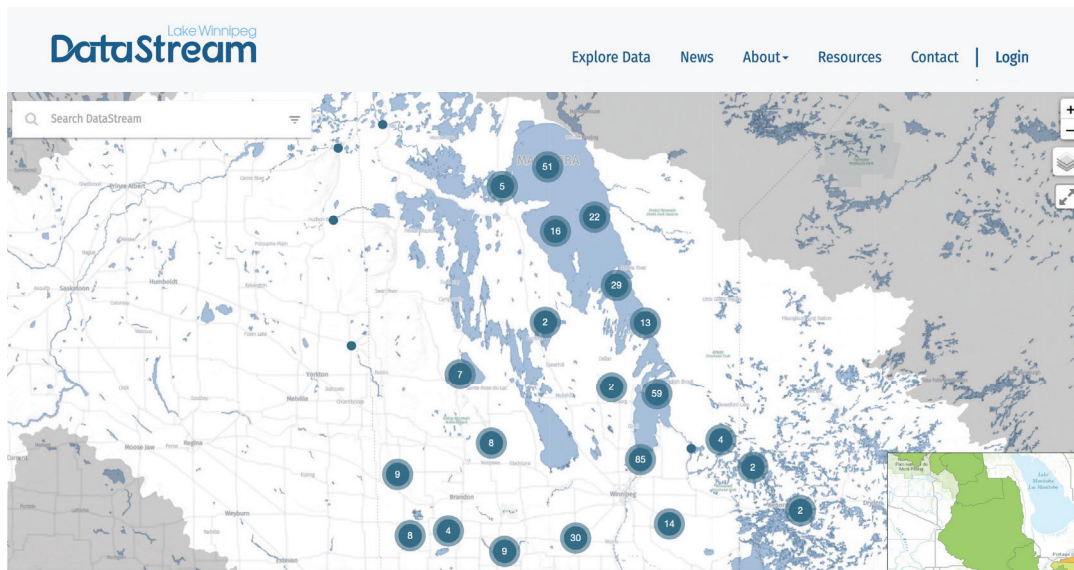
"In the last couple of days, I received correspondence from three different people who were looking for some clarity on water quality data," he says. "It could be [someone saying], 'I want to go take my kids to this beach and my neighbour said it had this problem—is that true?' Or, 'I've been fishing in this area for twenty years—is it still safe?'"

People know Stewart-Robinson will likely have an answer. ACAP Saint John has been monitoring water quality since its founding in 1992. For the past twenty-eight years, the organization has mobilized staff and volunteers to take water samples at various sites throughout the region. They then test samples for various potential issues: those that can harm aquatic life, like too-low oxygen levels or the presence of certain dissolved solids; chemicals such as phosphorous or ammonia, which can cause algae blooms; and fecal coliform, which indicates sewage contamination.

At the project's beginning, the collected

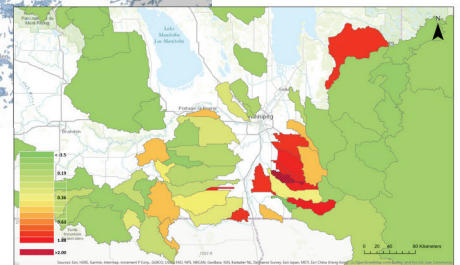
data was "numbers on lined paper," Stewart-Robinson says. Now, ACAP Saint John uses DataStream, an online open-access platform that allows users to share information on the health of waterways across Canada, to corral all that information. They've even digitized their earliest records, which Stewart-Robinson says makes them much easier to actually use. "People can see the record over time," he says. "And other researchers and other organizations in other parts of Canada [can see the data], which creates better outreach opportunities and better research links."

The added security of blockchain



(ABOVE) The numbered dots on this DataStream map show the location of monitoring sites where data is openly available in the Lake Winnipeg Basin. (RIGHT) This map, produced by the Lake Winnipeg Foundation, identifies phosphorus hotspots and is an example of how their community-based monitoring data builds our understanding of where phosphorus is coming from in the watershed.

(OPPOSITE PAGE)
Communities are playing a critical role in filling data gaps, including in Deninu Kųé First Nation, Northwest Territories.



technology makes DataStream a trustworthy source for communities, policy makers, and researchers. “Every data set that gets uploaded has a hash, which is like a fingerprint,” says Carolyn DuBois, director of the water program at The Gordon Foundation, the charitable organization behind DataStream. “DataStream stores that fingerprint on the Ethereum blockchain—and anybody can check to see if the data that they’re looking at is in fact the data that was originally uploaded.”

That means anyone who accesses ACAP Saint John’s data can also independently verify its authenticity, which makes for better and more equitable science, says Stewart-Robinson.

“DataStream is another tool for environmental groups to get better information to all people,” he says. “And I think in that way, it is an equalizer. It is a tool for environmental equity and environmental justice at the same time.”

Connecting communities

About a decade ago, a group of eight major oil and gas producers started investigating the Horn River Basin near Fort Nelson First Nation, a community of Dene and Cree

people in northeastern British Columbia. The companies wanted to extract gas via fracking, a technique in which a mix of water, sand and chemicals are injected into underground rock, causing it to fracture and release oil or gas.

Water is a pressing and ongoing concern for the Nation, and the community was, understandably, concerned about the effect fracking would have on the health of their water. They decided to take matters into their own hands, asking community volunteers to monitor water quality at thirteen local sites. When they asked the University of Victoria to review the data they collected, in order to make recommendations for changing BC’s fracking wastewater disposal laws, they faced a significant hurdle: they needed somewhere to easily store and access all the information.

That issue became especially urgent in 2012, when the BC government granted Nexen Inc., one of those eight oil and gas producers, a five-year licence to pump millions of cubic metres of water from North Tsea Lake, a small body of water in the Nation’s territory. Fort Nelson First Nation appealed the decision, but the lack of an easy way to access and share their own data was a challenge. While the government did end up suspending the

licence three years later, Nexen had already had a significant amount of time to pump from the lake—and Fort Nelson First Nation had spent a lot of time and energy to make their case.

It was clear that the Nation needed an effective way to share their data. The solution they found was DataStream. Anyone can visit the website to search for and find water quality data, explains DuBois. “We have focused on making it a map-based search,” she says, “so it’s really easy for people to navigate.”

The fact that DataStream is free and accessible to experts and non-experts alike makes it “a very important piece of infrastructure for anybody who’s doing water quality research,” DuBois says.

For Fort Nelson First Nation, DataStream also provides a way to connect with other Dene communities in the region. “We’re all Dene communities, but we’ve been disconnected in all sorts of ways from our relatives,” says Lana Lowe, director of the Nation’s Lands Department. “This is a way for us to not only share data and get a good picture of what’s happening in the whole basin, but also to connect with people and get the sense that we’re all in this together, and we’re all concerned about the water. We’re all taking action in our own way to do something.”



Bridging research

If you're wondering who benefits from access to water quality information, the answer is everyone. And everyone can contribute, too. Just ask Alexis Kanu, executive director of the Lake Winnipeg Foundation.

Kanu's organization was founded fifteen years ago by a coalition of citizens who noticed—sometimes over several generations—that algae blooms were appearing on the lake with increasing regularity. “That’s that green, soupy water. Sometimes it’s thick, like porridge. It stinks. It’s unsafe to swim in it,” she explains. “It can cause problems for water infrastructure and can cause health problems for people and pets.”

As the issue became more apparent, members of the Lake Winnipeg Foundation realized that individual citizens could take part in a solution. They recruited volunteers to help monitor levels of phosphorous—the nutrient that, when it's too abundant in the water, causes algae blooms. The Foundation assigns volunteers to sampling sites in close proximity to their homes, offices, or even along their commutes, so access is easy. When they see water levels start to

rise—in the spring, thanks to the thaw, or because of flooding at other times of the year—volunteers collect samples in low-tech containers made from PVC pipe and concrete. Then, the Lake Winnipeg Foundation analyzes the samples at the University of Manitoba.

That’s all still happening this year, even as COVID-19 has kept people close to home. ‘A number of our volunteers came to us and said, “Well, we’re stuck at home, we’d love to get outside and continue collecting these samples,”’ Kanu says. In response, the Foundation found ways for people to keep monitoring the region’s waterways safely. As well, notes Kanu, since provincial and federal programs were delayed due to the pandemic, “it could be that [the Lake Winnipeg Foundation] will have really useful data that is not available from agency monitoring programs.”

Designed to be complementary to provincial and federal data, the information the Lake Winnipeg Foundation shares via DataStream will serve to strengthen the co-operation between government and citizen monitors. “There’s a synergy here,” says Kanu. “Each program will bring different strengths and we should recognize those and use them.” ■

Why open access matters

It is surprisingly difficult to find data about water quality in Canada.

“It’s stored in all kinds of different ways, in open and closed systems,” says Carolyn DuBois, director of the water program at The Gordon Foundation. “It’s very, very difficult to find.” She points to a 2017 WWF Canada freshwater health assessment, which found there isn’t enough data available to give most of Canada’s watersheds a grade for water quality.

That’s why DataStream, which is free and doesn’t require passwords or software installation, is so important. Anyone can contribute or extract data—whether they’re researchers at a big university, northern Indigenous communities, or regular citizens who just want to know more about the health of their town’s water.

“We’re seeing a huge cultural shift in how science is being done and who is doing it,” DuBois says. “Scientists are now working with communities who want to play an active role monitoring changes in their environments.”

DataStream is led by The Gordon Foundation and carried out in collaboration with monitoring networks and regional partners, including the Government of the Northwest Territories (DataStream’s founding partner), the Atlantic Water Network, and the Lake Winnipeg Foundation.

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HILLTIMES



BUSINESS

Tables Turned

In a world where many restaurants won't survive the lockdown, what is the future of dining out?

BY COREY MINTZ

ILLUSTRATIONS BY MYRIAM WARES



IN 1999, Sanjeev Yogeswaran came to Canada as a refugee. He was fourteen years old, and his family had paid almost \$40,000 to get him out of Sri Lanka, which was gripped by civil war. At age fifteen, he began working at Pizza Hut; within a few years, he was working at three Pizza Huts at the same time, putting in seventy hours a week. Except for a brief period when he co-owned a pub, Yogeswaran has spent the vast majority of his restaurant career working for other people. And then the pandemic hit.

It was the last weekend in March. The business Yogeswaran managed was closed; two weeks without going in to work was the longest vacation he'd had in two decades. His sister, Mirna, a financial

manager, had been casually catering for years, cooking for friends' birthday parties and the like. The siblings discussed posting a small selection of dishes for sale, which they would deliver themselves to the areas near their homes, in the suburban Ajax and Pickering areas. With little planning—just that quick conversation—they shared a menu on WhatsApp, telling family and friends that they were offering kochikadai biryani (a rice dish in which a basic dough is used to seal the pot lid so no steam escapes), chicken fried rice with devil chicken (fried chicken chunks tossed in vinegar, soy, sweet sauce with peppers, onions, and chilies), and yellow rice with mutton curry. Within half an hour, Yogeswaran recalls, they started getting orders. “We hadn't started cooking.”

Cooking out of Yogeswaran's home, they delivered twenty orders that Saturday. Then they started promoting the food on Instagram and adding more dishes. By the third week, they were packing 100 orders and making lamprais: rice with mutton curry, eggplant moju (pickle), fish croquette, boiled egg, and blachan (a chili shrimp paste), all bundled in a banana leaf—a lot of work, but perfect for delivery because the leaf helps maintain the heat and moisture. They rented a commercial kitchen from 4 a.m. to 9 a.m., when it would otherwise have been closed, and hired one of Yogeswaran's laid-off cooks. During their busiest time, they were cooking and delivering five days a week: requests from customers in nearby municipalities had prompted them to schedule drop-offs in parking lots with one-hour windows for pickup. Yogeswaran is now looking for a bricks-and-mortar location to launch a post-quarantine business.

In the year or two before COVID-19 shut the restaurant industry down, articles started popping up about so-called ghost kitchens, which offer full menus via delivery but no restaurant you can walk into and eat at in person. Back then, discussions about the emerging phenomenon focused on the potential for restaurants to expand their reach without the cost of dining space or front-of-house staff—a far cry from landing on them as a creative dining solution to a worldwide public health crisis. What the Yogeswarans had done neatly encapsulates how many industry observers describe the current climate: changes to the sector that had been predicted to unfold over years have been accelerated to a matter of weeks.

Around the world, we're seeing indications of what dining will look like during what you might call the in-between phase of COVID-19: after restrictions have eased but before we have a vaccine. In Hong Kong, they're taking your temperature when you arrive. In some restaurants in Berlin, you scan a QR code on your table for contact-tracing, so the business can track you down if there's an outbreak linked to the premises. Some restaurants in Taiwan are using plastic dividers to separate diners. In Melbourne, restaurants

are offering limited menus and requiring payment in advance. A three-Michelin-starred restaurant in Virginia experimented with poshly dressed mannequins to make the socially distanced dining room feel less empty—because, as any restaurateur will tell you, not only are they unable to make money with a half-empty dining room, their customers don't want to eat in a half-empty room.

Food-and-hospitality services in Canada employ 1.2 million people, and the sector's revenue of about \$90 billion represents an estimated 5 percent of our GDP. When independent restaurants fail at the scale now being predicted—as many as 85 percent, according to a report commissioned by the Independent Restaurant Coalition, a US counterpart to Canada's Save Hospitality, an alliance of independent restaurateurs formed in response to COVID-19—they don't just take down their owners but their employees, suppliers, farmers, and landlords, along with the value of commercial rent and adjacent residential real estate. Because how much is your house really worth in that trendy neighbourhood, the one with all the cool places to eat and drink, when half those places are boarded up? Restaurants are a load-bearing pillar of our culture and economy.

It's too early to know the full breadth of what a post-vaccine restaurant landscape will look like. But, in the current liminal era, a few patterns are starting to emerge. Size matters. Flexibility is essential. And those who have the loyalty of their communities and are willing to try any and everything—like the Manhattan restaurateur who told me she considered transforming her shuttered dining room into a temporary daycare for friends—will be the survivors. Many other chefs, owners, cooks, and servers, and the restaurants they orbit, will not be so fortunate.

BACK IN MARCH, as it became apparent that COVID-19 was about to break out in earnest across North America, many restaurateurs attempted to calm their customers, assuaging health concerns with social media posts promising their commitment to hygiene and customer safety. Behind



the scenes, they were panicking. And, by the middle of the month, they started closing. Some cite the shuttering of restaurants in France as the first sign of what was ahead, others the suspension of the NBA season or Tom Hanks testing positive. Some wanted to close earlier, believing there was a moral and public health obligation, but were waiting for an order

from any level of government—an edict they could use to justify the closure to their staff, landlords, and creditors.

Some chose to do takeout and delivery, at a fraction of their usual revenue. Some talked to their lawyers about suing their insurance providers for rejecting their business-interruption claims. All of them were trying to figure out what



to do with the contents of their fridges: often tens of thousands of dollars' worth of perishable ingredients. Many gave them away to staff or food banks.

It sounds heartwarming—restaurants sharing their last loaves of bread and cases of fruit. And the intentions were certainly good. But it was hardly uncomplicated. The restaurants owed

their suppliers for those foodstuffs, and their suppliers owed their farm producers, and independent farmers are not known for being flush with cash.

Restaurants pay for their food on credit, typically with terms of about thirty days: when restaurants closed in mid-March, many were preparing to settle bills for food they had bought a month

prior. With revenue reduced to zero, how were they going to pay for the inventory they just gave away? “Ideally you should have three months of reserves that can cover you for all expenses, including payroll,” says Arturo Anhalt, who owns several Toronto restaurants, including Milagro and Dirty Bird. “I studied this in hotel-management school.” That’s the

theory. In reality, few restaurants have that kind of cash reserve.

“The economic disruption doesn’t end there,” says John Sinopoli, a Toronto restaurateur who helped organize Save Hospitality. “My suppliers have called me and said, ‘If more than 30 percent of you go bankrupt, we’re done. We can’t absorb all the receivables. You guys owe us too much money. We can’t write that off.’”

It’s hard to imagine the average outsider having strong views about the fixed costs or monthly payroll expenses involved in furniture manufacturing or dentistry. But it’s fairly common for people, whether or not they have any hospitality experience, to tell me that a restaurant dish is overpriced or what percentage of the business’s revenue should be coming from alcohol sales.

These assumptions come to us naturally: our familiarity with retail food and alcohol costs enables us to imagine that we understand restaurant food pricing. We see a plate of chicken and compare it to what we pay for chicken at the store, omitting the labour involved in ordering, receiving, stocking, and paying invoices for the chicken; in trimming, brining, storing, rinsing, and soaking it in buttermilk; in flour-coating, frying, and packaging or plating with waffles, hot sauce, and other ingredients, which are also not free. Additionally omitted: the price of commercial real estate, insurance, utilities, credit card fees, marketing, HVAC maintenance, grease-trap cleaning, training, and breakage. (This list is not exhaustive.)

Similarly, it’s easy for the layperson to assume that the proliferation of delivery apps has created a new revenue stream for restaurants, one that comes with less overhead—no extra square footage to rent and no servers to pay. But, while the tech companies that have made delivery so ubiquitous have done a good job promoting themselves as friends of the restaurant industry, they take exorbitant commissions—on average, about 30 percent—and the economic results for restaurants are mixed. (Mike von Massow, a professor in the University of Guelph’s Department of Food, Agricultural and Resource Economics,

sums up the problem with what he tells me is an old business-school joke: “A manager tells the boss there’s good news and bad. The bad news is we’re losing money on every unit. The good news is that sales are up.”) All of these costs come amid rising prices for everything—food, labour, rent—and growing public pressure to pay staff fairly, provide benefits, use better ingredients, and support sustainable food systems.

What all of these factors add up to is this: 95.8 percent of revenue for Canadian restaurants goes to covering their costs, according to national nonprofit Restaurants Canada. A restaurant owner who sells \$1 million of food and drinks will clear \$42,000 for herself after paying all her bills. That makes it hard to save for a rainy day.

These stresses are part of running a restaurant in good times. And, in those times, we can afford to perceive restaurants as small, one-off businesses to which we have specific, personal attachments. But these are not good times, and the future of restaurants isn’t just about restaurants alone, a weepy tale about the local bistro that we hope stays in business because they always remember our drink order.

Sinopoli says that the politicians he’s spoken to at all three levels of government, while they want to help, have no idea how to. And, in addition to the sector’s low profit margins and inherent fragility, that’s another challenge that restaurants face in this moment: not only does the public not understand how they work, neither does the government.

“**I** DON’T THINK I ever heard the word *hospitality*,” says Diana Rivera, senior economist at the Brookfield Institute for Innovation and Entrepreneurship, of her many years of academic study. “My instinct is that feeds into the federal response. If there is less research about it, then there is less information as to how they might act.”

“Business schools tend to focus on export-oriented industries,” explains Mike Moffatt, a professor of public policy at Western University. “That doesn’t dovetail well into restaurants. I think, in

general, it’s the devaluation of work done by women. Most economists are male. If you look at the industries we tend to focus our attention on, they tend to be oil, gas, and manufacturing—industries that are nearly 80 percent male.

“One other reason is we tend to focus on what you’d almost call ‘anchor tenants’ in a retail sense. If you’ve got a city that’s creating a lot of jobs in the tech sector or things like that, that will sort of automatically create a bunch of restaurants. So the idea is that a restaurant is not going to create an auto assembler, but having an auto assembler move to your city is probably going to create a bunch of restaurants.” And thus we have a great many economists who can advise the government on matters pertaining to the automotive sector and comparably fewer who are equipped to devise policy for restaurants: if business schools produce economists who don’t value or understand the hospitality industry, and the government hires graduates from those schools to advise it, it’s no wonder that a restaurant-specific support strategy eludes us.

This gap at the academic level may explain the government’s failure to put forth an industry-specific plan for hospitality. The supports it has offered to small businesses more broadly are also of limited help. Loans of \$40,000 may perhaps help a small shop owner who didn’t have to throw away their entire inventory, but they’re far less effective when a restaurateur uses a chunk of it to simply pay their debt on goods they never sold. And wage subsidies that require an employer to still pay 25 percent are untenable when revenue drops to zero and, as one restaurateur told me, your weekly payroll is \$70,000.

Save Hospitality has outlined several proposals for assistance that is more customized to the industry. They include: forgivable loans intended to cover shutdown losses and reopening costs, the cessation of commercial property taxes, a requirement that insurance companies honour business-interruption claims, and a reduction of taxes on spirits. There has been no official government response to the proposals.

FOR RESTAURANTS that have kept operating during the quarantine, even partially, it's been an uphill battle. Early in the pandemic, Iori Kataoka's Vancouver restaurant, Yuwa Japanese Cuisine, shifted to producing food for takeout. It's a compromise: items like Yuwa's griddle-cooked Wagyu loin steak, the luxuriously fatty beef served on a sizzling platter with sauce made from sake lees (a yeast by-product of the fermentation process), cannot be stuffed into a takeout container. "And you may think sushi is fine," says Kataoka. "Not really." Sushi rice should be human-skin temperature. It hardens as it cools. Unless fish is cut fresh, it leaks moisture. "Completely different experience." But, early on, Kataoka found that most of her staff already owned a couple of packages of masks at home. So she pivoted quickly. With just a few employees in the kitchen and Kataoka doing deliveries herself, she was averaging about 30 percent of her previous revenue at first—by July, it was about 55 percent.

"There is a Japanese saying," says Kataoka. "Act as if you are grasping the straw to climb up the mountain.' That's what I'm feeling. You don't have anything to hold. It may break any time. But you have no choice. You have to climb up."

The reality is that many restaurants will never reopen. Until a vaccine is created and distributed, those that do will be facing ever-changing COVID-19 outbreaks, capacity limitations, and a recession. Industry analysts expect that restaurants in our postpandemic world will be smaller in a number of ways. "We'll definitely see [fewer] bricks-and-mortar locations," says Robert Carter, industry adviser for Straton Hunter, a hospitality-consultant group. "Even the ones we do see will have smaller footprints." He envisions underperforming independents closing, with chains taking advantage of a reduction in rents to expand their locations. Large restaurant companies have access to capital along with departments dedicated to strategic planning, marketing, and other business development; in a time of flux, this can be a great advantage. Smaller restaurants share a bond with their customers and have loyalty in

their communities that chains often do not, but they've traditionally been too lean to plan for emergencies and have little in the way of savings.

Constrained by those parameters, what will restaurants in the latter group do to boost their odds of survival? We've seen chefs performing tutorials on Instagram, dining spaces repurposed to package food for takeout and meal kits, restaurants turned into grocery stores. These initiatives are important in the short term, for increasing cash flow and maintaining a connection to customers, but they have their limits.

Changes to the sector that had been predicted to unfold over years have been accelerated to a matter of weeks.

"Diversification gives some insurance against uncertainty," says von Massow, the University of Guelph economist. "But only if it doesn't cannibalize the core business. [Restaurants] shouldn't try to be all things to all people."

Though many restaurants began selling groceries in addition to cooked food in response to the pandemic, most can't make money on that model in the long term. As dining service resumes, the storage room it requires will eat up too much precious square footage and fridge space. And, as safety concerns about returning to grocery stores wane, most people won't be willing to shop at restaurants anyway. If a restaurant can execute additional services, such as making meal kits, which increase business volume during otherwise quiet hours, that will help, says von Massow. But, if they pull volume out of the kitchen during peak hours, then it's a competitive service rather than a complementary one.

As delivery continues to be a larger focus, some restaurants will have to change their physical spaces, shrinking dining rooms and expanding kitchens. Carter also predicts that more will shift to providing their own delivery to avoid exorbitant app-based fees—a new challenge for independents whose core competency is cooking and service. On the upside, says von Massow, "it may deal with some of the issues we've had with [that] delivery model: cold food, control, distance, which foods get delivered."

Self-delivery is also going to make ordering more expensive. The third-party app-based "disruptor" version of this service comes at the expense of its couriers, who are exploited by virtue of being independent contractors, and is subsidized by the venture capital that gets poured into the tech industry. When restaurants have to pay standardized wages to people delivering food, those costs will have to be passed on to the diner.

Overall, von Massow and other industry analysts believe that restaurant eating will need to become more expensive. "We will eat out less, but we'll have to get more out of the experience," he says. "I'm not sure we have a sense of the elasticity of restaurant demand yields. It probably varies by type of restaurant." Elasticity is the measure of how much consumer demand changes based on price fluctuations: it's why demand goes down when prices go up. Given that supply—the number of tables in a restaurant, which will need to be spaced out to allow for physical distancing—is going down, von Massow suspects we'll soon learn more about this no-longer-academic question. If there are only half as many seats available, let's say, how much will a restaurateur be able to increase her prices before customers start to balk and those tables go empty anyway? An extra 10 percent? For the people who scramble for reservations at the latest hot spot, probably. For many of us who have been cooped up for months and are desperate for a sense of normalcy, maybe. An extra 100 percent? We have no idea.

People eat out for a lot of reasons. One of them is to feel like a part of something: the unique intoxication of a room full

of strangers eating, drinking, laughing, and flirting. It's the difference between seeing a really funny comedy in a theatre full of people and watching it on your laptop, alone. The best restaurateurs are magicians, and the environments they conjure are as much stagecraft as cooking. That's the part, perhaps even more than the nuances of the food on the plate, that all the takeout and delivery in the world cannot replicate—and we're about to find out just how much that part matters. How much is a restaurant experience really worth?

Answering that question may involve ideas that were previously almost unthinkable in the industry, such as demand, or dynamic, pricing. Embraced long ago by airlines, hotels, and car-rental agencies, dynamic pricing is the practice of adjusting what you charge based on fluctuating demand—it's why it costs more to fly on weekends than mid-week. The only Canadian restaurateur I know who has tried this is Roger Yang, who recalibrated the cost of the tasting menu at a restaurant he had couple of years ago: a little bit less from Sunday to Thursday

and a little more on Friday and Saturday. (The goal back then was not to increase revenue but to more evenly distribute it, along with labour, over the week.) Because he won't be able to safely fill all the seats at his restaurants on weekends now, he thinks he'll probably use this model again over the next while. Other restaurants that won't or can't shift a significant portion of their revenue away from dine-in service may find themselves inclined to do the same.

What's far less clear is whether and how the pandemic and its aftermath will affect the third rail of restaurant politics: wages and tipping. Some restaurateurs think that the preexisting pressure to improve payment for servers and kitchen staff, combined with the constraints of dining in this in-between, pre-vaccine time—needing to space tables out means fewer diners, and fewer diners means fewer tips—make the choice clear. "Everybody is starting to rethink their business," says Amanda Cohen, chef-owner of New York's Dirt Candy, which eliminated tipping in favour of a service charge in 2015. "Everybody is having this

big come-to-Jesus moment.... The way we run our restaurants just left everybody so vulnerable, including ourselves—because we don't charge enough for food and we don't pay our employees more. And, when the shit hits the fan, we're all about to lose our restaurants. And we all willingly participated in this." She predicts that "there will be a much stronger movement to get rid of tipping" and to increase wages "across the board."

Amanda Peticca-Harris wants to believe this is true. Before Peticca-Harris was a professor at the Grenoble School of Management, in France, she managed restaurants in Canada. The business professor in her says, Yes, there's an opportunity for a no-tipping movement. But her first-hand knowledge of the industry leaves her far more skeptical. "COVID-19 isn't going to be the time that they go, 'I've just had this epiphany. Let me innovate with no tipping.' They're going to draw those purse strings even closer because they're going to be scared." Peticca-Harris believes that the period of economic uncertainty could, instead, prompt a cycle of exploitation. "That's a bad climate

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for employees and employee rights. ‘I’m grateful to have this job,’ as a mantra, can be a bit of a dangerous terrain.”

NOT EVERYONE was unprepared. While the majority of restaurateurs scrambled to cope with the seismic shock to their system, some had the resources to weather or adapt to the storm. Richmond Station, in Toronto’s financial core, has been busy since it opened in 2012. As is usually the case with a successful restaurant, diners and interviewers constantly asked when the proprietors were going to open another location (perhaps a bit more so in this case because Richmond Station was founded by chef-owner Carl Heinrich just after he won *Top Chef Canada*). But, because Heinrich and his partners have resisted the common urge to expand, and because they’re operating their restaurant with no debt, he thinks they’re in a good position to get through.

Many wildly successful chef-driven restaurants have had to shutter locations recently—not because the businesses weren’t profitable but because they don’t have the cash reserves to sustain a long closure. Momofuku has permanently closed two of its locations (Nishi, in New York, and CCDC, in Washington) while Portland’s Pok Pok has permanently closed four of its six locations, the owner citing the carrying costs of so many businesses as a factor.

Staying small is one protective mechanism, it turns out. Old fashioned innovation is another. Five years ago, just a few blocks away from Richmond Station, Colin Li began taking over the restaurant his parents had opened in 1997. It was difficult at first: he remembers his parents resenting his insistence on shortening Hong Shing’s menu of 200 dishes. But, gradually, Li managed to court a new audience with an updated menu and modern social media strategy while maintaining existing clientele by holding on to key dishes and cooking methods. And then, a year ago, Li began developing an online ordering system. The problem with the delivery-app companies wasn’t just their commissions, Li believed, but their control of customer data.

In a stroke of good fortune, Li launched his ordering platform two weeks before everything went haywire: without intending to, he had spent the past year preparing for a pandemic. On the back end, the new ordering system gave him the ability to see which web pages his customers were coming from (like via Instagram or through a Google search), how much time they were spending on his website, where on the page they were stopping, and where they were clicking. Using information like this, he can automatically target customers by, for

**In good times,
we can afford
to perceive
restaurants as
places to which
we have specific,
personal
attachments.
But these are
not good times.**

example, sending them an email encouraging them to try a dish he already knows they’ve been eyeing. Seeing Chinese restaurants close all over the suburbs, Li launched a social media campaign asking people where they wanted him to deliver; he would go to wherever there were the most requests.

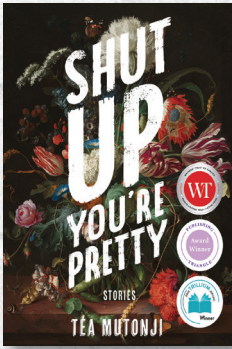
Most customers have become used to making food choices at the last minute: what they want, when they want. Changing this kind of consumer behaviour is hard. But quarantine, isolation, and public health guidelines upended so much of our behaviour overnight that they also created opportunities—and those are what enabled Li to redefine this relationship with diners to the point where they will order dinner days in advance.

A MORE EPHEMERAL but no less significant obstacle to recovery is the language we use to describe the times we’re in—how we use words like *recovery* in the first place. Calling our current phase of COVID-19—not quite shut, not quite open—a “restart” or a “reopening,” as many governments and establishments are, underplays just how big and long-lasting the challenges are. “I think that’s entirely the wrong term,” says Moffatt, who worries that language like this makes the process seem easier than it is. The looming discontinuation of government support, as opposed to an alternative strategy that includes long-term investment in retraining and jobs programs, reflects the problems with thinking of something as a “restart.”

“I think it matters very much what we call anything,” says the Brookfield Institute’s Rivera, urging language that prioritizes this as a transitional, gradual stage, one that is likely to have setbacks. The danger of “reopening” language, says Rivera, is that restaurants will be operating at very difficult margins—maybe at a loss, maybe breaking even if they’re lucky. And, with simplistic terminology, there will be less public awareness of those risks and struggles and, therefore, the possibility of a too-fast withdrawal of government support. “That adds up to a huge macroeconomic risk.” If policy makers don’t recognize the transitional, gradual nature of this recovery, we could see another wave of closures and job losses: restaurants that used savings, savviness, and government help to survive the quarantine period only to reach insolvency when they reopen, but just partially.

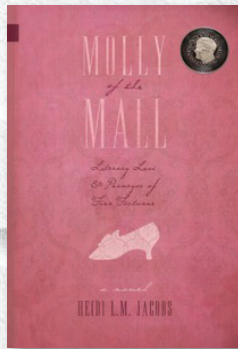
One fragile thread to guide us up a mountain. When I check back with Kataoka, a while after our first conversation, she offers up a new saying: “A drowning man will catch a straw.” We may yet find that there is more truth to that than we’d hoped. ☺

COREY MINTZ is a food reporter who has written for the *Globe and Mail* and the *New York Times*. He is currently working on a book about the future of restaurants.



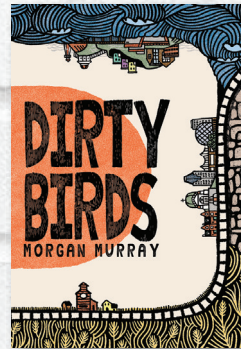
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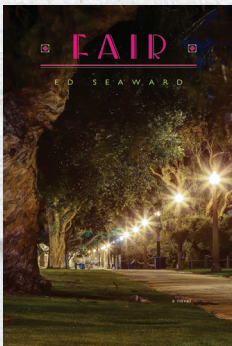
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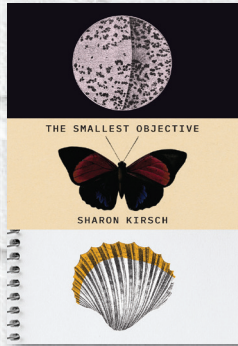
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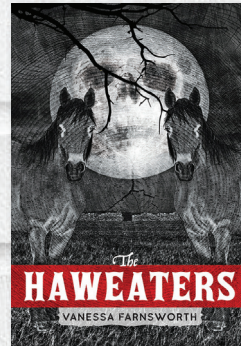
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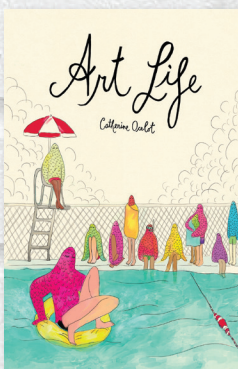
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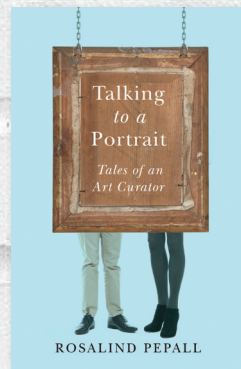
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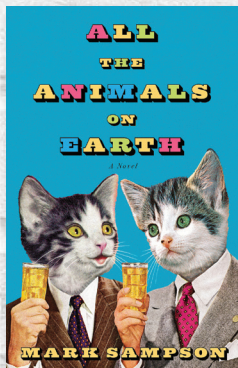
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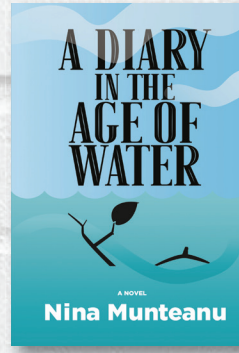
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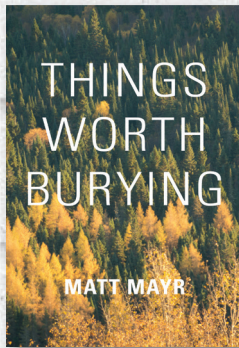
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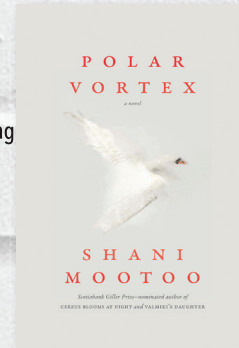
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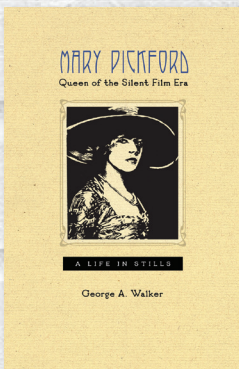
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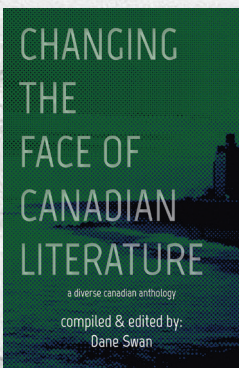
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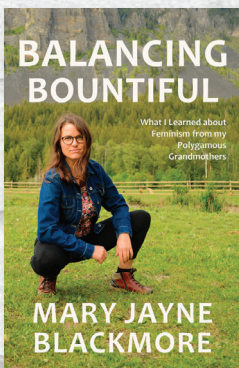
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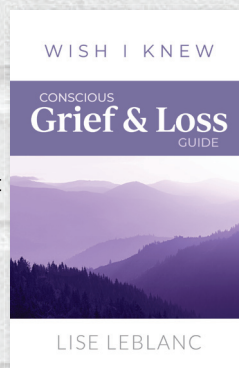
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TECHNOLOGY

The Making of an Incel

How online misogyny turns into offline violence

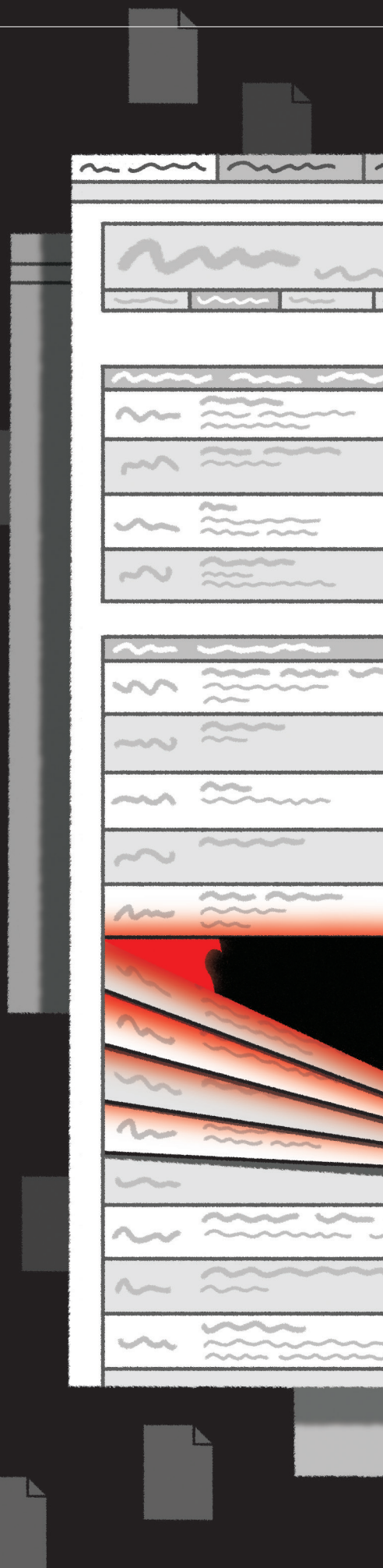
BY KATHERINE LAIDLAW

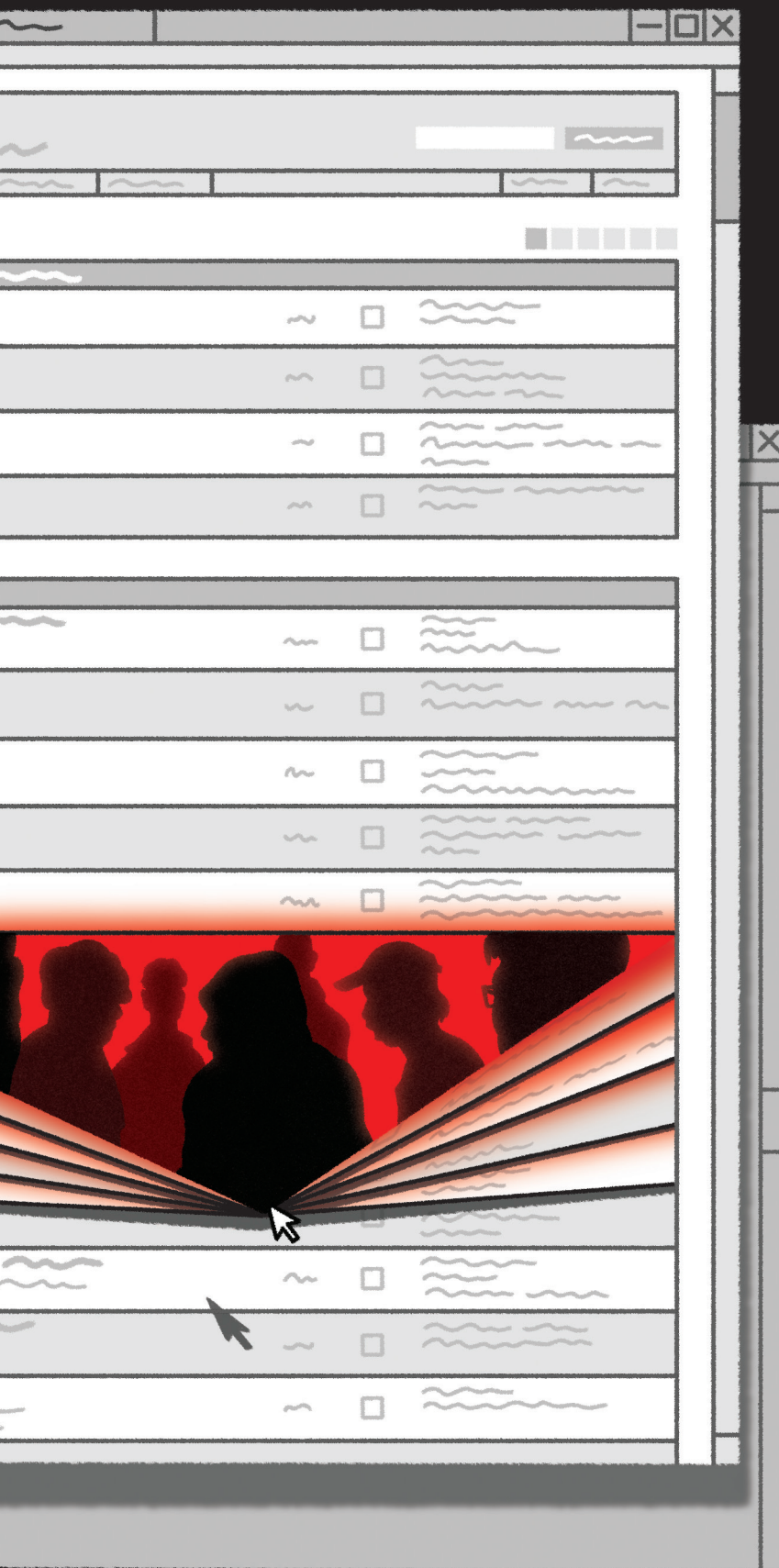
ILLUSTRATION BY ANSON CHAN

MASS VIOLENCE motivated by misogyny is repeatedly attributed to mental illness, framed as the act of a lone man driven to snap by his disordered neurology. That's what happened in Montreal when a gunman killed fourteen women in 1989. It happened again when another man murdered six people in Isla Vista, California, in 2014. And again when a fifty-one-year-old dentist killed twenty-two people in and around Portapique, Nova Scotia, in April, in the deadliest mass shooting in Canadian history.

The connections between mental illness and attacks like these will be explored in depth in a trial set to start this November. Alek Minassian is accused of killing ten people and attempting to kill sixteen others by driving a van through crowds of pedestrians on a Toronto sidewalk two years ago. The judge in the case has said the outcome will turn not on whether Minassian committed the crime but on his state of mind when he did.

Hours after the attack, Minassian told police that he wanted revenge. He'd been rejected by a woman and was part of a group known as "incels," a community of self-described "involuntarily celibate" men who gather online to share frustrations about a lack of access to sex. Thousands of users fill forums on websites like 4chan and other, darker parts of the internet. They discuss violent fantasies—such as ruining the good looks of attractive men and women with acid attacks—encourage rape, and advocate for mass killings. In the last few years, some of these calls have resulted in attacks offline, new developments in the tradition of misogyny-based violence that has existed for the duration of human history.





It has always been easier to isolate the perpetrators in these cases by their psychologies than to ask, How did we get here? But the research we gather after every misogyny-motivated mass killing shows us something we'd rather it didn't. It reveals that there is a terrorist ideology at work and online forums have given it a place to fester and spread. One study, published last year in the *Journal of Language Aggression and Conflict* and conducted by six researchers from around the globe, used language analysis to determine that the incel ideology frequently has links to violent extremism. For example, the forums' users have a unique and well-developed subculture language that clearly defines an in-group (the people who aren't having sex) and an out-group (the people who are). The forums also contain direct incitements to violence, and some users frame the only solution to incelism as harming one of the out-groups. The fantasies are vivid, as is the glorification of people who have carried out those scenarios.

In May, the Canadian Security Intelligence Service (CSIS) moved to classify the incel movement as ideologically motivated violent extremism, which could make it easier for law enforcement to lay terrorism charges in the event that an attack is committed by a member. The day before that announcement, the RCMP laid what is likely the world's first-ever terrorism charge against a self-identified incel, a seventeen-year-old who had killed a woman and injured two others in a Toronto massage parlour.

Still, the narrative of the unstable lone wolf endures. And, as researchers try to move past the paradigm of violence and mental illness, they're learning more about the anger brewing in these forums. To explain how that anger has become a social issue, Amy Coren, a Florida State University (FSU) researcher who focuses on the incel community, offers an analogy. When you walk into a restaurant, she says, you either look for a hostess station or seat yourself if there is a sign that says so. You don't walk into the kitchen and start cooking. The question is, Why not? The script that tells us what to do inside a restaurant is one of the hundreds

of thousands that run through our heads every day, tacit knowledge about how to interact—how to *be*, really—in society. Somehow, she says, the incels’ scripts have been twisted. “Our questions should be, How do they get these scripts? How do they think that’s a valid way of interacting with the world?”

PUNDITS HAVE long cast about for simple explanations to the tangled problems of misogyny and violence. Days after Toronto’s van attack—and before CSIS had linked the incel movement with terrorism—one columnist wrote, “I am sure that many people were relieved (as I was) when [the theory that this was a terrorism attack] turned out to be wrong. A terrorist attack has far grimmer political, social and security implications than a random act of violence by a homicidal loser.” Following other attacks similarly motivated by misogyny-as-ideology, some commentators have suggested that video games, prescription stimulants such as Ritalin, or psychosis were to blame. (Such arguments continue to be made even though people living with mental illness are statistically more likely to be victims of violence than perpetrators of it.) Still others have proposed sex robots as a way to stem the sexual frustration and, ultimately, the violence. But these narrow solutions are misguided and won’t solve a societal problem. Many of the incels who frequent online forums aren’t really angry because they can’t have sex. Theirs is a conversation about power: they are angry because they can’t have sex with the women they feel they deserve simply for being themselves. They reject the idea that women, whom they view as subhuman “femoids,” have the right to choose at all.

Roman poet Horace described anger as a “transient” madness. The quotation, which has been translated in slightly different ways across centuries, comes from *The Epistles of Horace*, first published in 20 BCE. Two thousand years later, clinical psychologist Louis Sass would write, “the madman is a protean figure in the Western imagination, yet there is a sameness to his many masks.” This perception

of the violent criminal as necessarily insane has pervaded the cultural conversation across millennia. That view persists today, even as the news fills with attacks linked by ideology we see and don’t want to believe. “The conflation of mental illness and violence is a very difficult paradigm to overcome,” says James Clark, dean of FSU’s college of social work.

The college is where new research on incel radicalization is taking place, prompted by yet another tragic attack. In November 2018, a man walked into a Tallahassee yoga studio and shot five women and one man before killing himself. The army veteran had planned the attack for months and identified publicly as a member of the incel community in a series of YouTube videos he posted under the name Scott Carnifex—Latin for “executioner.” Twice, in 2012 and 2016, he’d been charged with battery against a woman. Like many in the incel community, he’d expressed admiration for Elliot Rodger, the man who killed six people in Isla Vista, California, and left behind a garbled manifesto.

The Tallahassee man killed two women that night in the yoga studio. One of them was Maura Binkley, a twenty-one-year-old FSU student. In the aftermath, her parents wanted to advocate for stricter gun regulations and red-flag laws, which would allow family members or police to petition the court to temporarily take away someone’s firearms if that person were deemed to be a danger to themselves or to others. To power their activism, Maura’s parents needed data—on intimate-partner violence, for example, and developing and recurrent misogynist ideologies—that they couldn’t find. The Binkleys decided to partner with FSU, under an umbrella organization they called the Maura’s Voice Research Fund, to support research that might prevent violence against women, including examining stalking-violence patterns, evaluating red-flag laws, and developing threat-assessment tools for people motivated to kill not a particular person but an entire subset of people. The organization’s ultimate goal, Clark says, is to produce research that can drive policy changes to help prevent future attacks.

Coren, one of the researchers at the college, says her work will tie what we know about ISIS radicalization on websites like Facebook to linguistic and environmental analyses of incel forums. She’s working to develop a portrait of a community, she says, a typology of incels that will allow researchers and policy makers to differentiate between a “shy incel” and an “aggressive” one. The distinction might help the team identify ways to prevent violent attacks. Researchers in the field know that infighting is rampant, for example, and that there’s a visible contingent that objects to violence. “There are certainly incels who have a lot of unexpressed anger and aggression toward women, but there are a lot of incels who absolutely do not,” Coren says. “There’s a contingent that says, I feel alienated, I don’t feel like I can talk to people. They’re the ‘shy incels.’” The faction that incites violence is smaller but has an increasingly vocal bent and developed ideology, each fantasy ratcheted up to best the last.

But, Coren says, the research team doesn’t believe either of these classifications has anything to do with mental illness. “The idea that you can relate those two things seems very enticing. But it’s just a correlation, not causation. You could have mental illness and be an incel, but mental illness doesn’t cause you to be an incel. This is a sociological phenomenon that’s driven by social awkwardness, expectations, community, self-perceived deficiencies, and alienation. Those, coupled with a community that stokes the fire, are what drives the incel movement.”

The impact of social alienation is undeniable. Talk on the forums often devolves into self-loathing and suicidality. One subgroup of the incel movement, known as “blackpillers,” occasionally promotes rape and suicide for incels who are deemed too ugly to get laid. “There really is nothing else worth living for, people laugh at us for that but it’s the truth,” reads one post on *incels.co*. “The only reason we exist is to share love and have sex. If you can’t do that, there is no ‘hobby’ or ‘career’ that can make up

or replace that. There's just nothing." Another reads, "An incel's options are cope or rope."

“INCELDDOM, for a long time, has been viewed as a disease, not a state,” says Lauren Callahan, an independent researcher who works with Clark. This idea suggests that members are sick with the same ailment their compatriots have and that, rather than a passing state, it's an illness that can't easily be cured. Like many echo chambers, it keeps participants participating, stuck in an increasingly nihilistic headspace. This perspective dovetails with the idea, from terrorism theorists, that the foundational components of radicalization are needs, narratives, and networks. *The Three Pillars of Radicalization*, a 2019 book on the subject, explains that, when someone has all three—a desire for personal significance, a narrative that guides them in that quest for renown, and a network that offers veneration to the members who validate and implement the collective narrative—they're much more likely to progress into violent extremism. And research is proving that these online communities act as pressure cookers, speeding up the radicalization process.

Callahan has observed an increasingly militarized language style in forums hosted on various websites and on Discord servers, where private chats take place. Similar to other avenues of online radicalization, *incels.co* offers a posting structure that incentivizes participation and escalation. At zero posts, you're a “recruit.” After 500, you're moved up to an “officer” ranking. At 1,500, you're a “captain”; at 5,000, you're an “overlord”; at 25,000, you're “transcendental”; and, once you reach 30,000 posts, you're “enlightened.” If the implications weren't so sinister, it would sound cartoonish. Coren and Callahan have also been exploring the forums' coded messages, word usage, and preliminary links that tie excessive first-person pronoun use—talking about yourself more than about others—into the language of radicalization and extremism.

Some servers, in an attempt to rid themselves of incel communities, have

treated them like rodents in a game of whack-a-mole, a well-intentioned approach that has largely proven futile. In November 2017, when the online platform Reddit shut down an incel forum it hosted, the group had approximately 40,000 members. Their grievances continue to reverberate through the internet, on sites such as *incels.co* (more than 10,000 members) and *looksmax.me* (more than 6,000 members), among others. For years, incels have written posts in ciphers to evade detection by law enforcement, something the Toronto

“The real intellectual problem here is, Can we accurately predict violence before it happens?”

van killer Alek Minassian explained in his April 2018 interview with senior detective Rob Thomas. On these forums, MAP, for example, stands for “minor-attracted person” and is used to describe those who post about underage girls. “Going ER” is used as a signal for violence and incorporates the initials of Elliot Rodger, who carried out such an attack. In his interview, Minassian also told police that he'd been in private communication with Rodger and with another man, who killed nine people at Oregon's Umpqua Community College in 2015.

MAKING SENSE of a movement in which participants are migrating to darker parts of the internet to avoid being watched can feel overwhelming. “Sometimes I think, This must be what it was like to live through

the Gutenberg era,” Clark says. “I feel like an illiterate parent whose children have the Bible for the first time. The impacts of social media are just as profound.” He's been tasked with developing a threat-assessment tool that will eventually help law enforcement and policy makers better implement red-flag laws. “The real intellectual problem here is, Can we accurately predict violence before it happens?” Clark muses. “The answer is no.”

At least, not yet. In May, the Canadian government announced a ban on 1,500 types of assault-style weapons. Public-safety minister Bill Blair also said the government plans to table gun-control reforms when Parliament is able to resume regular sessions, including expanding red-flag laws that would allow relatives, victims, and community members to report someone who could pose a threat. And, as more and more American states implement red-flag laws, groups like Maura's Voice are mining the work of security experts and forensic psychologists on related topics, such as how to protect celebrities from stalkers and assailants.

Developing a threat-assessment framework, Clark says, will include monitoring what's happening in online forums and treating them as their own environments, with similar social and psychological consequences to the ones that arise from places people gather in person. “Most mental health professionals, including in law enforcement, are trained to work with people who are acutely suicidal or homicidal. But not somebody like the people we're talking about, who are very angry and have an ideology of hate and may have some plans for how they want to make that known in the world,” Clark says. “There are so many different pathways to an act of violence. We're not claiming to develop any kind of magic instrument to predict future violence. The idea is prevention.” †

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SCIENCE

Tick Tock

*The bloodthirsty parasites are spreading north—
and making the woods more dangerous than ever*

BY STEPHANIE NOLEN

PHOTOGRAPHY BY EAMON MAC MAHON



WHEN KATIE CLOW and her research students arrive in a windowless lab at the Ontario Veterinary College, in Guelph, Ontario, on a drizzly late-fall morning, envelopes have piled up on their workbench like a manila snowdrift. They slip on white coats and reach for scissors to start slitting open the padded packets. Each one contains a slip of paper and a small plastic vial or two. The paperwork lists the name of a veterinary clinic somewhere in Canada and the identifying details of someone's pet: a six-year-old golden retriever in Moncton, a four-year-old tabby in Victoria.

Inside each corresponding vial is a tick—or fifty—plucked from the body of that pet and mailed in for research. With her team, Clow, a professor of veterinary medicine with expertise in epidemiology and ecology, opens the vials and tips the rigid bodies of the arachnids into a petri dish. Unless they're not dead: after a week or two in the custody of Canada Post, they sometimes emerge and start scurrying across the bench. When a live one tumbles out in front of research assistant Kiera Murison, she snatches a pair of tweezers to pluck it up and deposits it into a vial of ethanol, with a whispered apology, swirling it around to bring a prompt demise.

When the ticks are all definitely dead, they are stored in the fridge until Clow, an ebullient thirty-two-year-old whose students call her the Tick Queen, has time to sit down with a box of them. She identifies the ticks quickly, by species and by gender, based partly on the appearance of their hard outer shell, called a scutum, and sometimes by the shape of their protruding mouthparts. Most of the ticks mailed to her Canadian Pet Tick Survey are American dog ticks, *Dermacentor variabilis*, or blacklegged ticks

(also called deer ticks), *Ixodes scapularis*: those are the two types you are most likely to find on your pet or your tent or your toddler this summer.

OPPOSITE

An adult female blacklegged tick in Christie Lake Conservation Area, near Hamilton, Ontario

Once identified, the ticks go under the knife: with a scalpel blade, Murison slices them to bits. Ticks that were found and removed before they had time for a long feed are smaller than a watermelon seed and nearly as crunchy: they resist the scalpel. But the engorged ticks, the ones that had a hearty blood meal, can be swollen up like a stewed cranberry. Cutting them is more like carving a soggy M&M. "You definitely hear the outer shell breaking," says Murison, hacking away at a rigid American dog tick so vigorously that her blond ponytail swings back and forth. When the engorged ticks are dissected, they give off a loamy smell from the coagulated blood that has ballooned them to as much as

"Ticks are taking over the reins as the number one vector of pathogens to humans. And that's only changed in the last twenty years."

ten times their original size. Clow and her team marinate the chopped ticks in chemical reagents then run them through a process that extracts the DNA in the bug hash. There are two main types of genetic material they are looking for in blacklegged ticks: that of *Borrelia burgdorferi*, the bacteria that causes Lyme disease, and *Anaplasma phagocytophilum*, the cause of anaplasmosis, which brings fever, vomiting, and in rare cases, can cause respiratory and organ failure. Clow finds *B. burgdorferi* in about 25 percent of samples; *A. phagocytophilum* is much more rare, found in just 1 to 2 percent.

Murison shoves aside a heap of envelopes and shakes her head at the pile. "We're not supposed to be getting this many in October," she says. There are ticks in all seasons now. Lyme rates are surging because the ticks that spread it—*I. scapularis*, predominantly—are

rapidly expanding their range. Climate change has made much of the most populated part of Canada an ideal habitat for many species of ticks; *I. scapularis*, which spreads Lyme, in particular, is rapidly expanding its range. In the early 1970s, there was just one known colony of blacklegged ticks in Canada, at Long Point, on the north shore of Lake Erie. By the 2000s, the tick was being found all over southern Ontario, Quebec, Manitoba, and the Atlantic provinces. Today, they're marching steadily west from Manitoba on their eight tiny legs.

I. scapularis is no bigger than a poppy seed when it does most of its damage, but this particular tick is emerging as an outsize threat. "Their capacity to move into new areas and to take advantage of suitable habitats and warming climates is completely different," says Robbin Lindsay, a research scientist at the National Microbiology Laboratory in Winnipeg. Lindsay has studied this particular tick extensively in a long career that has made him an internationally recognized expert on vector-borne illnesses. He has been bitten by hundreds of ticks, a couple of which made him hideously ill, and yet, when he speaks of *I. scapularis*, admiration suffuses his voice. "The sky seems to be the limit for them," he says. "They are taking over the reins as the number one vector of pathogens to humans. And that's only changed in the last twenty years." *I. scapularis* is "extremely Catholic with its taste for blood," Lindsay says. It will feed on both migrating birds and big mammals that cover wide ranges—helping it expand its territory—and it's also delighted to encounter a human and her dog. In tick-borne disease literature, the blacklegged tick is almost universally described as "aggressive."

The knowledge that this tick is proliferating in the most densely populated area of Canada, potentially spreading not just Lyme disease but anaplasmosis and babesiosis, an infection that resembles malaria, is disturbing in ways that it feels as though we have not yet grasped. It will precipitate a significant change in how Canadians view our relationship with our environment. When I asked another tick expert, Nick Ogden, a research

scientist at the National Microbiology Lab, how much he worried about ticks, he explained that, since he did much of his research in Africa, where he was thinking about puff adders, typhoid, cholera, malaria, and about a dozen other things that might kill people, ticks figured fairly low on his list.

In Canada, however, the list of ambient things we must fear is not long. Outdoors, it's grizzlies, rattlesnakes, maybe a rogue cougar if you are massively unlucky, and of course, the cold. Otherwise, it's icy highways, drunk drivers, and unstable ladders. But we don't need to worry much about lethal things lurking in our gardens or in the dark corners of our closets. Or, rather, we didn't need to. Until now.

ON A COLD grey autumn afternoon, Katie Clow takes me into the woods, an hour's drive from Guelph, to drag for ticks. She equips me with a white hazmat suit, seals off my ankles with duct tape, and hands me a white flannel blanket taped to a metre-long stick. Then we set off into the underbrush, dragging the blanket awkwardly over brambles. We pass a few hikers, who take one look at our CSI getups and our blankets and hurry away. Clow and her team of students go dragging every year, and every year they find ticks farther north. "One year you find a couple of ticks," she says, "and the next year you're finding half a dozen ticks, and the next year you're finding ten ticks and *Borrelia*."

Where there is *Borrelia burgdorferi*, there's a risk of Lyme. The disease causes fever, fatigue, and joint aches, and it is an emerging public health problem. There were 2,025 cases reported to the Public Health Agency of Canada in 2017, the last year for which data is available, but the agency speculates that number is underreported and predicts as many as 10,000 new cases each year in the 2020s. Huge swaths of Ontario, Quebec, Manitoba, New Brunswick, and Nova Scotia are now considered Lyme risk areas. But, at the same time, we're more aware of Lyme and how to manage it: many people who spend time in areas with ticks know

to do a "tick check" after being outside and know that, if you find and remove the bug within twenty-four hours of when it began to feed, you can't get the Lyme bacteria. While there is no vaccine for Lyme available, the bacteria is treatable with antibiotics. If you don't find the tick or don't get the telltale bull's-eye rash, Lyme can be harder to identify, and you can suffer symptoms for weeks or months until diagnosis. A small subset of those infected report a "chronic" infection, although most scientists reject the idea this could occur; one hypothesis is that the so-called chronic infections are actually coinfections of Lyme and another tick-borne pathogen, such as *Anaplasma*, for which doctors do not routinely test.

After about an hour in the forest with Clow, I stop for a periodic inspection of my blanket and, right near the top, heading with surprising speed for the handle (and my bare hand) I see—something? "Katie," I ask, "is this a tick?"

Clow hurries to me, leans in for a look, and lights up like Christmas morning. I have picked up an adult female black-legged tick, with a black hood on a handsome dark-red scutum. A short while later, Clow finds a tick on her own blanket and is equally pleased: you'd never guess she has encountered 10,000 ticks in her professional life. She identifies it—another *I. scapularis*—then sets it gently down on a leaf so I can have a good look. The tick immediately scooches to the end of the leaf and begins to wave its front legs back and forth.

"Ooh," Clow croons. "She's questing!"

A questing tick waits at the end of a blade of grass or leaf, with its legs outstretched, tracking the changes in heat and CO₂ that signal that something biteable is walking by, poised to jump aboard—a sort of arthropod hitchhiking. Watching Clow watch the tick, I recognize the phenomenon that I saw in Robin Lindsay and every other tick expert I talked to: the admiration for ticks, for their adaptability and ingenuity and complexity.

A tick can live for a few years without feeding. But, like a video game vampire, they need blood—a "blood meal," as it's known in the zoology world—to level up

and move between stages of the life cycle. They start out as eggs, typically laid in the leaf litter on a forest floor. (But some, like the brown dog tick, will deposit eggs in a convenient crevice in your floor.) The eggs hatch into larvae, with just six legs, usually in late summer, although the seasonal timing varies between ticks. And thus begins the hunt for a host—a reptile, bird, amphibian, or mammal that will provide the blood that will allow them to mature. When the larvae have fed on something small, they drop back to the ground and moult, becoming a nymph. They will overwinter, burrowing under the leaf litter to keep warm. As nymphs, they develop that last set of legs, and at this stage, they can host many pathogens. When the next blood meal happens, typically off a larger creature, they are able to be infected with bacteria or viruses—and to pass them on, when they feed again, as an adult. Nymphal ticks are tiny, and thus much harder to spot and remove, so they're the ones most likely to get away with making their way inside your trousers and having a long feed. After the nymph moults again to become an adult, it quests its way onto a larger host, such as a dog or a deer or a human. Males and females meet and mate on a host before dropping off; some species lay several thousand eggs in a process that can take weeks. If a female doesn't find a host to reproduce on in the fall, she burrows back into the leaf litter and waits for spring.

It's a risky requirement, this need to feed on an exponentially larger and faster-moving host, when you're a slow-moving creature the size of a sesame seed. And it's the range of ways that ticks have found to navigate that risk that seems to make the tick people really excited. I asked Nick Ogden, a soft-spoken man from the north of England who emigrated to Quebec after studying Lyme disease at Oxford, why he chose ticks when he was starting out as a veterinary scientist—given that he had his choice of creatures great and small. He started

OPPOSITE
Katie Clow
drags for ticks
in Christie Lake
Conservation
Area in
November 2019



off casually but, in seconds, had revved up into a full-throated praise song:

They're just amazing, amazing parasites. They are immensely tenacious. You find ticks pretty much everywhere in the world, in a whole lot of different ecological niches to which they have adapted themselves. Their whole biology is fascinating, how they sense hosts around them by being able to smell the CO₂ we produce and the other kinds of pheromones that we're producing. Then there's their whole feeding thing: everyone thinks it's like mosquitoes, that they're just like a syringe, but they're fascinating! They dig a hole in us, they bury their heads in, and they feed for up to two weeks. The mouthparts of an adult female tick are about the size of a splinter. The first thing that you feel with a splinter is that it hurts. And the first thing that you feel when a mosquito bites you, either it hurts or it stings. But you don't know the tick is there!

A tick can coat its body in its own saliva, a liquid salty enough to pull moisture from the atmosphere. That is sustenance enough to keep it going for months—or even years—while it's waiting for a meal. The saliva is produced in glands that can occupy as much as a third of the tick's body cavity, and when it is time to feed—the most dangerous time in a tick's life—this liquid is its primary defence mechanism against a host's immune system. When you stroll by and a questing tick makes the successful leap, it attaches in one of two ways: by transuding a sort of glue to keep its mouth in place, or, as with the black-legged tick, by poking barbed mouthparts into your flesh. When a tick bites, it begins by secreting enzymes that destroy a circle of flesh and create a tiny puddle of blood, which it begins to suck up. (A tick takes in blood and sends out saliva in alternating cycles.) The tick needs to kill pain so you won't realize it's there and flick it off. And it needs to stop your body from mounting the immune response that it would otherwise send

against this intruder from the moment its mouthparts pierce your skin. Among the 3,500 proteins identified in the saliva of various ticks, some stop the molecules carrying a pain signal, while others are vasodilators, to get the blood flowing, or anticoagulants, to keep it from clotting. Some proteins stop the histamine response, which would make the bite itch and clear a path for immune cells to reach the site. There are also molecules that inhibit white blood cells. And, because the tick needs to keep feeding for days—keeping your immune system fooled—it changes up the protein composition of its saliva, like a dash into a phone booth for a new disguise.

*“We see every year
this creep northward,
where sites that
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the year before are
now positive.”*

So there you are, with a tick feeding and passing pathogens into your body after having disarmed your immune system. It's the ideal situation, Ogden says, for a virus or bacterium looking to fulfill its evolutionary obligation by finding new animals to infect. “If a bug has to get from an arthropod into a host, what a wonderful gateway it is, where the tick's feeding.”

TICKS LIKE their tissue soft and thin, as Eric Stotts can tell you. Last October, Stotts went on a guys' weekend to a cabin near Port Mouton, on Nova Scotia's south shore, a couple of hours from his home, in Halifax. An affable forty-eight-year-old architect, Stotts goes with his buddies every year, and in addition to a lot of eating and drinking, they always take on a project and learn a new skill that someone in the group can teach. Last fall, it was filmmaking,

and Stotts spent much of the weekend crouching and lying on the forest floor as he filmed long still shots of the last dark yellow leaves on the trees—aiming for what he called a “kaleidoscopic” nature effect. He thought his film turned out pretty well, and when he was back in his home office on Monday, he was feeling good about things.

Until he went to pee.

And there, on the end of his penis, was something small and black. “I kind of poked at it enough to realize, Okay, it's definitely attached, it's not moving,” he says. And that's when he thought, Tick. He zipped up his pants and headed to the medicine cabinet for tweezers. His wife worries about Lyme disease, so he knew the procedure: he had to make sure he got the whole tick out, including the head and mouthparts now buried in his most sensitive skin. “I had to be a little bit more aggressive than I would have hoped,” he remembers. There was digging. But Stotts is the sort of fellow who likes to find a bright side, even when gouging the end of his penis with a sharp instrument. “In a strange way, I was kind of grateful that it was so obvious, you know, because, had it attached anywhere else, it could have gotten to the point where the transmission of Lyme disease could have happened,” he said. “It picking the most prominent, visible spot ended up being a real advantage for me, actually.”

Using Google, Stotts quickly confirmed that his new companion was *I. scapularis*. He kept the tick bits and headed to his walk-in clinic, wondering if the tick should be tested for Lyme. He was waiting in an exam room when a nurse came in to ask what ailed him. Stotts decided there was no point in trying to maintain decorum.

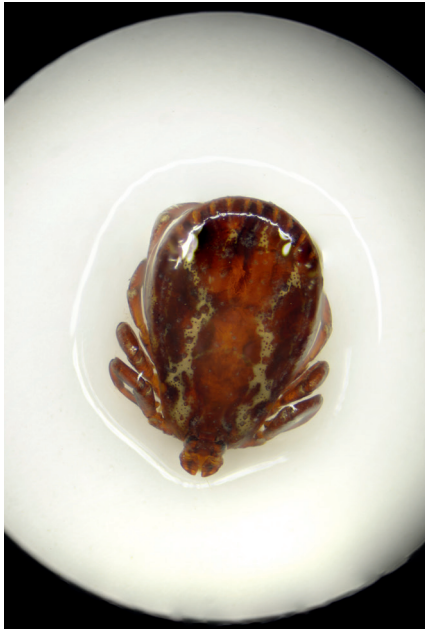
“I had a tick on my dick,” he said.

The response was not what he expected.

“Well, that's the second one I've had this week,” the nurse told him. (The other patient had actually had a tick on his scrotum, which Stotts considers far more distressing and invasive than a tick on the penis. He feels sorry for that guy.)



1



2



3



4

1 Adult male *Amblyomma maculatum* (Gulf Coast tick) 2 Adult male *Dermacentor variabilis* (American dog tick) 3–4 Adult female *Ixodes scapularis* (blacklegged ticks), unengorged and engorged

The doctor Stotts saw did not send the tick for testing: at this point, the protocol is to prophylactically treat anyone likely to have been exposed to Lyme disease. Stotts swallowed “horse pill” antibiotics for two weeks and sent an email to all the guys who had been with him that weekend, warning them to do a tick check.

He did not, for the record, attach a tick dick pic.

EVEN A DECADE AGO, when Stotts started going on those weekends away, there were only a handful of tick populations in Nova Scotia; now, the region south of Halifax is the second biggest source of mail-ins for Clow’s pet tick study, which began last year. But the section of Canada that makes a suitable habitat for ticks—and for *I. scapularis* in particular—has expanded dramatically over the past twenty years. There is

a lot of debate among scientists about why that is, but climate change figures in almost every hypothesis. Of all the environmental factors that affect the size of tick populations, temperature is the most important. Shorter, warmer winters are good for tick life cycles. It’s not that they freeze in winter—they can weather the cold hunkered down in the leaf litter of wooded areas. Rather, when it’s colder, a tick takes longer to quest and is slower to move through each stage of the life cycle—so a greater proportion of them die before the cycle is completed. At the same time, milder winters mean that migratory birds are nesting progressively farther north, transporting ticks with them to establish in new areas. Hardy *I. scapularis* has proven adaptable to a range of climates, from Florida to Nova Scotia.

Research conducted in the 1980s, when Lyme disease was emerging as a serious public health problem in the US, showed that most of Canada was too cold to have to worry about the black-legged tick; Ogden found the same thing in the early 2000s. But the research reveals the speed at which the impact of a warming climate has been felt: Ogden and Lindsay contributed to a paper, published in the *Journal of Applied Ecology* in 2012, predicting that “the proportion of the human population of eastern Canada inhabiting areas with established tick populations [would increase] from 18 per cent in 2010 to over 80 per cent by 2020.” And they were right, although Ogden wishes it were otherwise. “It’s gone from a model-based hypothesis to a public health reality in a decade,” he says. Meanwhile, the white-footed mouse, the most important reservoir for the Lyme bacterium, is also expanding its range north. It likes the short winters, too, and breeds more rapidly than it used to.

And then there are other ecological factors, such as forest fragmentation: when urbanization breaks contiguous wooded areas up into patches. You might think that would reduce the amount of wildlife around and thus be bad for ticks, but by condensing the populations of some mammals (such as those mice) while evicting large predators, such as cougars

and wolves, that would eat the deer that are a preferred host for adult *I. scapularis*, it creates a sort of tick food court. “We see every year this creep northward,” Clow says, “where sites that didn’t have ticks the year before are now positive.”

ON A SEPTEMBER DAY in 1958, a tow-haired four-year-old named Lincoln Byers was in the barn on his family’s farm, twelve kilometres west of Powassan, Ontario, when his brothers noticed his eyes were acting funny, flicking to the side, and he had a tremor in his arm. His parents took him to see the family doctor, who took one look and urged them to get him to The Hospital for Sick Children, in Toronto, a six-hour drive in those days. When they got there, Lincoln was feverish but with no obvious cause of illness. Two days later, he was fading in and out of consciousness, and monitoring of his brain suggested it was inflamed. On the fourth afternoon, he suddenly stopped breathing and was placed in an iron lung. He died two days later.

His devastated parents gave permission for an autopsy to two physicians, one of whom was Donald McLean, a virologist at the hospital who had been following the case closely. They cultured fragments of Lincoln’s brain and injected the product into mice, which developed signs of acute encephalitis. But, when the samples didn’t come up positive in serology tests for any known encephalitis, McLean and his collaborators realized it was a new virus. The closest comparison they could find was a virus that, in Russia, was transmitted by ticks. So McLean hung up his lab coat, picked up a shotgun, and drove his team to Powassan. They began around the Byers’s farm and worked outward: they killed squirrels, chipmunks, rabbits, and other mammals, and harvested any ticks they found. Back in the lab, they found that some of the animals also activated the blood test they had developed for the new virus. Eventually they concluded that Lincoln, the second youngest of nine children, had likely been bitten by an infected tick while holding dead squirrels his brothers were skinning. McLean and

his colleagues also tested the blood of park rangers and others who worked outdoors around Powassan, finding that several of these people carried antibodies to the virus; they expanded their investigation to the blood bank in Sudbury, where they confirmed that a percentage of the population had been exposed.

Newspapers ran alarmed stories after McLean published his research, but Lincoln’s death remained a tragic exception. By 2009, fewer than fifty cases of what came to be called Powassan virus had been reported anywhere. That, Katie Clow says, makes for an interesting epidemiological mystery: the virus is clearly circulating somewhere in the wild, being passed from ticks to mammals and back

*“I don’t think
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there are ticks that,
one bite and
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again, often enough that there are these rare infections—but not a major public health threat.

The discovery of Powassan virus, a vicious form of encephalitis that can cause permanent neurological damage or death, in *I. scapularis* changes how we have to think about that risk. *I. scapularis* can pass the virus to its eggs, so its offspring do not have to progress through the life cycle and get infected to become vectors. And, while the public health response to Lyme disease is based on tick-checking—because it will take the tick at least twenty-four hours to pass on the bacteria—this is not the case for Powassan. A tick needs to feed on you for only about fifteen minutes to transmit that virus, explains Nicole Nemeth, a veterinary pathologist and expert on arboviruses, including Powassan, at the University of Georgia. Lyme bacteria live in a tick’s gut, and when the

tick starts to feed, the bacteria begin to multiply and make their way through the gut wall and up to the salivary glands, where they are transmitted to the host. But Powassan lives and reproduces in a tick’s salivary glands, so it’s right there, ready to go the moment a tick bites.

Powassan virus is an arbovirus within the genus *Flavivirus*, along with the West Nile, dengue, yellow fever, and Zika viruses. While some unknown percentage of people who are infected show no symptoms at all, the virus is fatal in approximately 10 percent of diagnosed cases, and it causes permanent neurological damage in an estimated 50 percent of those who recover. In 2017, a sixty-eight-year-old retired high school teacher from Ottawa found a feeding tick on her shoulder when she was at a cottage in southern Quebec. “I’m not a hypochondriac,” she says. Two of her friends had had a rough go with Lyme disease, so she took the tick to her doctor, who gave her a prophylactic antibiotic and—in a lucky twist—sent the tick off to Public Health Ontario for analysis. Reassured, the woman, who told me her story but doesn’t want to be “the public face of Powassan,” travelled to British Columbia on holiday.

Ten days later, in Kelowna, she developed a fever, then quickly became so ill that her partner had to drag her unresponsive body through the doors of an emergency room. Soon she was in intensive care with encephalitis and meningitis. Her children flew to her bedside because doctors warned she was unlikely to survive. Because of the known tick bite, she was treated for Lyme and tested for other tick-borne illnesses, including Powassan. But that test was negative, which isn’t uncommon: the virus may not show up in blood tests for two weeks or more. The determined—and fascinated—doctor who first saw her in the ER tracked down what Robbin Lindsay, who was eventually pulled into the case, calls the “smoking tick.” The specimen was rushed to the National Microbiology Laboratory, where it was identified as a partially engorged *Ixodes marxi* nymph that, when put through molecular testing, was found to contain RNA for Powassan virus.

In Kelowna, the woman, still desperately ill, looked in a mirror and saw her face, frozen and twisted like that of a stroke patient. As she was being loaded onto a medevac flight back to Ottawa, she was finally told of her diagnosis, but she was too sick to care. It was only days later that she began to process that all this had come from a tick bite. She spent two months in a rehabilitation hospital, using a wheelchair, unable to feed herself; she is back to taking long walks now but has limited use of one arm, poor balance, double vision in one eye, and experiences occasional fits of choking. “People think of Lyme and think, Well, it could be treated,” she says. “But I don’t think that there’s a big awareness of the fact there are ticks that, one bite and you could die.”

The surging prevalence of Lyme disease tells us how far and how fast *I. scapularis* is moving. It will take Powassan virus with it, and other things too. “This tick is a microbial sponge,” Lindsay says; it seems as though anything researchers screen it for, they find. First it was *Borrelia*, then *Anaplasma* and *Ehrlichia*, which causes fever and muscle aches. “What’s so striking with this tick is that, the more types of pathogens you look for, the more you find.”

Tracking the diseases is one preoccupation for Lindsay and his colleagues; they also have to be on the lookout for new ticks of concern. In August 2017, a woman in New Jersey was shearing her pet sheep when she discovered ticks. And not just a few: by the time she made it to her local public health department, she had more than 1,000 ticks on her own arms and clothing. There, entomologists struggled to identify the ticks—they didn’t look like anything local—and eventually Rutgers University scientists had to use DNA to establish that they were *Haemaphysalis longicornis*, the Asian longhorned tick. It is native to Japan, Korea, China, and far-eastern Russia. In Asia, it is a source of serious illness, including a hemorrhagic fever called *Huaiyangshan banyangvirus*, which is fatal for up to 30 percent of those who catch it. *H. longicornis* was the first invasive tick species found in the United States in eighty years, and there was hope

the cold winter would kill it off. But, the following spring, the CDC reported, it was found not just in the original location but in nine more states, on wildlife, on pets, in surveillance (dragging in the woods), and on two people. Clow and Lindsay say it’s only a matter of time until it is found in Canada. Researchers can’t tell yet whether mammals or birds in North America will be receptive reservoirs for the *Huaiyangshan banyangvirus* (it is, however, closely related to the Heartland virus, which ticks pass to reservoirs in the US) or whether the tick can transmit pathogens to humans on this continent. For now, the biggest risk is to the livestock industry. Female Asian longhorned ticks are capable of parthenogenesis: if they don’t find a male to mate with, they simply reproduce alone. A single tick can quickly create infestations of thousands of ticks on sheep and cattle, and the effect can be so severe that the host dies of blood loss.

Every tick researcher I spoke with brought up the Asian longhorned: nobody likes these lurches into the entomological unknown. I asked Nicole Nemeth what keeps her up at night. “Just the ease with which these pathogens spread around the world, and we won’t necessarily even know it until it’s already killing either a bunch of people or a bunch of animals—that’s scary, and it could happen any moment of any day,” she said. “A tick on someone’s body could easily then drop off and bring something crazy from the other side of the world.” Crimean-Congo hemorrhagic fever, say, or Russian tick typhus.

In 2004, I was living in South Africa and travelling for work across the continent. One day I developed a terrible fever; a crusty black scab, about five centimetres in diameter, on the back of my left calf; and lymph nodes as hard as stone. A succession of doctors diagnosed me with everything from a spider bite to cutaneous anthrax to possibly leukemia before an acerbic elderly South African medic surveyed me in a hospital bed and said, “*Rickettsia africae*. Good old tick-bite fever.” I soon discovered that half of the people I knew in Johannesburg had had it, usually as children. In southern Africa, the bacteria is carried

by *Amblyomma hebraeum*, a prettily patterned tick that feeds primarily on cattle. It rarely passes diseases that are fatal to humans—although the fever often lasts for weeks, as mine did—but the losses to livestock are punishing in poor countries such as Eswatini, which, I eventually figured out, is where the tick got me.

I recovered from *Rickettsia africae* after forty-eight hours on antibiotics (although the lymph nodes in my leg stayed rock hard for the next year). It remains, though, the sickest I’ve ever been—despite twenty-five years of reporting in countries full of all the things Nick Ogden said preoccupied him more than ticks. I never again went into long grass or paddocks in tropical countries without dousing my legs with DEET.

Yet I didn’t take the same steps when I was back in Canada—not until Katie Clow took me tick dragging. She thinks about the campaigns that have, in her lifetime, persuaded people to use seatbelts, quit smoking, and wear sunscreen, and she wonders how long it will take for the change to come with ticks. “My message to people is, We are in a new era where this is part of your daily public health things that you’re supposed to be doing: if you go out in the woods, you should be checking yourself for ticks, you should be covering up.” Tuck pants into socks, wear long sleeves, apply insect repellent, and perform a tick check—behind your knees, behind your ears, and, well, where Eric Stotts would tell you to check.

Since my day in the woods with Clow, the Canadian forest trails I have walked since I was a child feel different. In the woods these days, I get the occasional cold prickle on the back of my neck. It’s not the sense that bears or wolves might be watching me. It’s not the fear of getting lost in the cold. It is the knowledge that there are thousands upon thousands of tiny hunters who can sense my breath and who are waiting, poised at the end of a long blade of grass, their front legs outstretched, for me to come close. ❁

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STEPHANIE NOLEN is an eight-time National Newspaper Award winner with expertise in international human rights and public health issues.

JUSTICE

Beyond Bars

The case for abolishing women's prisons

BY LAUREN MCKEON

ILLUSTRATIONS BY JEREMY LEUNG

AT THIRTY-SEVEN, Treena Smith has been in and out of Nova Scotia's correctional centres more than fifty times. Her criminal charges have a way of falling into one another: one mistake can trigger a dozen breaches of her probation, dragging Smith back to jail. A reunion with her girlfriend might lead to a party, which could defy no-contact restrictions, break rules against drug and alcohol use, and contravene orders to keep the peace. If the couple gets into a fight, the damage is worse. Each violation also extends Smith's total probation time, increasing the chances of another slip-up. She doesn't want to be in prison, but she doesn't know how to live outside it either. "Prison has become like a safety net," Smith says over the thrum of voices leaking through the crackly phone line at the Central Nova Scotia Correctional Facility. "What I fear is getting back out into the community. I feel like a failure there. I feel like I don't really belong anymore."

Smith is hardly alone. While men still make up the bulk of prisoners, women are Canada's fastest-growing prison population. Federally, we lock up nearly

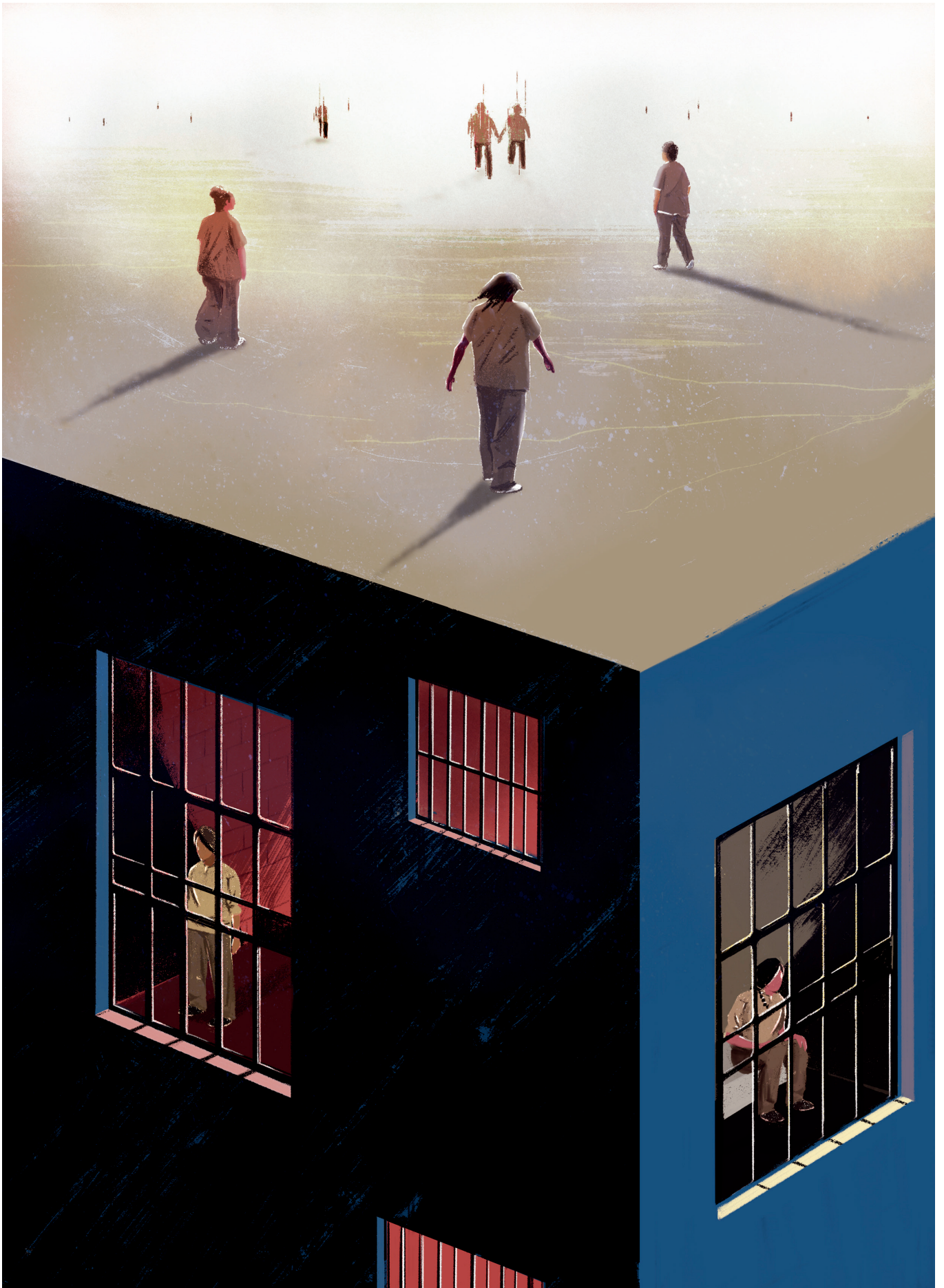
40 percent more women than we did a decade ago—a rise that has coincided with cuts to social services nationwide and the overpolicing of racialized communities. Between 2002 and 2012, the number of Indigenous women in federal custody more than doubled. In eastern Canada, Black women and women with disabilities are incarcerated at higher rates than the rest of the population. Most inmates are single mothers. The vast majority have never had steady employment, a bleak reality reflected in the crimes for which they tend to get imprisoned. A quarter of the women in federal custody are there for drug offences, sometimes taking the fall for others. Beyond that, property crimes, such as shoplifting and vandalism, rank as the most common transgressions. Any violence is often in self-defence—against an abusive partner, for example.

Rarely, in other words, are women incarcerated because of an abhorrent act—the type of scary, blood-splattered crime that prison supporters and modern culture alike conjure as justification for the correctional system. By and large, these women have found themselves in terrible situations and are desperately trying to get out, which can lead to

prison's problematic allure as a temporary refuge.

Sandra Bucerius heads the University of Alberta Prison Project and is a professor of sociology and criminology at the school. She has interviewed over 600 prisoners in one of the largest qualitative studies on the challenges facing inmates worldwide. Dozens of women have told her that incarceration is better than the alternatives: going hungry, living on the street, being beaten by partners, being unable to afford medication, or facing addiction without access to treatment. But, as Bucerius points out, prisons were never designed to be stand-ins for mental health support, addiction care, employment services, or shelters. Instead, they are structured around ideas of punishment, places where we "lock 'em up"—"them" being Canada's dangerous and undesirable. Even as notions of reform and healing have muddled their purpose, the ugly truth is that prisons warehouse people we don't want or don't know what to do with—people our society has failed to support.

That's especially true of women prisoners. A 2017 government-led study found that nearly 80 percent of women in federal custody had a mental health



disorder, with nearly a third having been diagnosed with PTSD. A full three-quarters struggled with alcohol and substance abuse. Without a robust network of social services outside of prison, the incarceration cycle can be difficult to break. Millions of Canadians report that their mental health needs aren't fully met, with many saying they can't afford to change that. Private care for addiction treatment is prohibitively expensive; public wait-lists are long. Prison can begin to feel like the only place where a woman fits in. "I'm alienated out there," says Smith. "It's not like you've been out of prison for a week and you're cured and you feel okay being out. It's a long transition." To compound it all, women prisoners rarely have stable homes to return to. Or, as Bucerius puts it: "Many prisoners are not going back to houses with picket fences."

If prisons are what Bucerius calls "a social tragedy," they're also an expensive one. In 2016/17, it cost nearly \$84,000 a year, or about \$230 a day, to house a woman in a federal prison. Overcrowded conditions, as well as the ever-increasing number of people being kept in remand custody—on any given day, 50 percent more incarcerated adults might be awaiting trial or sentencing than those actually in custody—have led those who support prisons to call for their expansion, often under the guise of making them more humane. In 2018, the government estimated that, depending on the type of facility, the price tag for each additional prison bed for women rings in at anywhere between \$260,000 and \$534,000. Already, Canada spends about \$5 billion annually to maintain its prisons. That's a lot of money for a broken system—one that doesn't seem to be especially good at deterrence or rehabilitation.

"If we were talking electricity bills," Ivan Zinger, the federal prison ombudsman, told the *Globe and Mail* last year, "this would be the equivalent of telling Canadians they are paying the highest hydro rates in the world and getting tons of blackouts." COVID-19 has further pushed the prison plight into the mainstream, exposing just how fast

the virus can spread through buildings so overcrowded, unhygienic, and in poor repair. (As of July 1, 360 inmates in federal prisons had contracted COVID-19; two had died.) In his reports, Zinger has consistently recommended funnelling more money into the existing, underfunded community programs that can keep former inmates from returning to the system: parole oversight, assistance with accommodation, job searches, and general reintegration into daily life.

It's a sensible and forward-thinking goal. But many believe it's no longer enough. For these abolitionists—

"Darkness never comes in prison," one inmate wrote, "until they cut us down and carefully lay us in a body bag."

a movement comprised of progressive politicians, criminologists, university professors, community activists, and dozens of human rights organizations—the question isn't how the prison system can be better, it's: What if we never sent people to jail at all?

IN NORTH AMERICA, prisons were first conceived as a kindness. Before the system was created, criminals were banished by Britain and France to penal colonies, or worse, were publicly tortured and executed. In the late 1700s, American Quakers imagined a different system: one in which offenders would instead find penitence through silence, isolation, and religious instruction—hence the term "penitentiary." Personal reform also played an important part. Prisoners were given a chance to expunge the character deficiencies that had led to their crimes and emerge obedient, newly

moral, and essentially transformed. For supporters, penitentiaries were places of salvation and second chances. In June 1835, Canada opened the Kingston Penitentiary, the first large prison in the then burgeoning country. Like its American counterparts, Kingston—which housed mostly men but also women and children—was supposed to change prisoners into perfect citizens through discipline and hard work.

Less than fifteen years later, the strategy unravelled. Whatever good intentions attended their creation, prisons quickly become places to exile Canada's most unwanted: Black and Indigenous people, independent women and sex workers, the poor, the French. Many prisoners were demonized and, as a result, cruelly treated. The first major investigation into the penitentiary, the Brown Report, was released in 1849 and revealed the corporal punishment of boys and girls, most of them between eleven and fourteen. They were routinely flogged, usually for innocuous infractions, like making faces, winking, and laughing. One eight-year-old boy was beaten forty-seven times in nine months. The Brown Report called their treatment a case of "revolting inhumanity." Women didn't fare any better.

According to Ted McCoy's *Hard Time: Reforming the Penitentiary in Nineteenth-Century Canada*, most women had been convicted of nonviolent crimes, often theft. Yet the severity of their punishment outweighed their alleged misdeeds. Stuck in a section of the prison so overrun with bugs that their bodies were often blistered with bites, female offenders were physically, emotionally, and sexually abused by guards and inmates alike—in some cases resulting in pregnancy. Many were seen as deserving of the abuse, with one annual report on their treatment dismissing them as "common prostitutes, diseased of body, and debased in mind from a long continuance in a career of crime." They could not feel shame, the report's author, a chaplain, insisted, and should not be expected to. This didn't stop prison officials from demanding intensive labour from female inmates in the name

of redemption. In one year, thirty-six women prisoners sewed 6,000 pieces of clothing and darned 10,425 pairs of socks. The Brown Report was a scathing account of penitentiary conditions, but it was met with apathy: the new prison system might not have been working, but what other options were there?

Investigators attempted to answer that question again in the 1930s, amid the Great Depression's spike in inmate strikes and riots. The Archambault Royal

protect society, in part by helping prevent so-called occasional criminals from becoming habitual offenders and helping nonhabitual offenders become law-abiding, working citizens. Without humane treatment, the commission believed, any punishment was bound to fail. With it, though, prisoners could return to society as better people—an adult version of being grounded. There was only one problem, which the report also acknowledged: nobody had quite yet

acted upon (not least because prisoners were put to work on the war effort).

One significant thing, however, did change. Under this renewed commitment to prison reform, the Canadian government reaffirmed the need for a separate space for women. (It also resolved to stop imprisoning children in adult facilities.) And yet, while the government appeared to understand the problems with confining women in the same spaces as men, it also decided to model the new women's prisons primarily after the existing ones for men.

For much of Canada's history, the Kingston Prison for Women (P4W) was the only federal institution for women in the country. It opened in 1934, directly across from the Kingston Penitentiary, and after enduring countless controversies over extreme prisoner maltreatment, it finally shuttered in 2000. In that time, eight government task forces and commissions recommended its closure, including one four years after it opened and another in 1977 that famously declared the prison "unfit for bears, much less women."

Plans were already underway for P4W's closure when things went very wrong in late April 1994. It started with a brief but violent confrontation between six women and correctional staff. The women were placed in segregation, also known as solitary confinement, which only escalated tensions in the rest of the prison. An inmate took a hostage, another attempted suicide. As the situation worsened, the prison's warden called in an all-male response team from the nearby Kingston Penitentiary to strip-search the segregated women. Afterward, the men, nicknamed the "goon squad" by prisoners, left the women in paper gowns, restraints, and leg irons. The humiliating incident was filmed and later leaked to the CBC's *The Fifth Estate*. Outrage followed. Soon afterward, the federal government appointed Justice Louise Arbour to investigate the incident and the reaction of Correctional Service Canada (CSC).

In her report, Arbour noted the timing of the P4W incident. In 1990, the government-appointed Task Force of Federally



Commission of Inquiry was intended to both reexamine prison reform and reorient the system toward rehabilitation. It stressed that what it called "the accidental or occasional criminal," as well as the "reformable criminal," should always be "returned to freedom." Yet, while the report frowned on the idea of retribution, it did not challenge its status as a central tenet of prison ideology.

"It is a fact," the report stated, "that the fear of being swiftly caught and surely punished has prevented, and will prevent, the commission of crime." The trick of prison, it added, was to not keep punishing those inside it. In other words, once people were in prison, there was no reason to punish them further. The authors argued for prisons as places to

figured out how to bring that humane treatment about.

"At the present time," the report noted, "many of [these] problems appear to be practically insoluble." Still, it reminded Canadians that the prisons' defining goal—the protection of society—included the protection of offenders too. Those released from prison must be taken care of, including through measures that addressed the social contexts of their crimes in the first place. It called for strict but humane discipline rather than "eye for an eye" payback. "The public, too, must be humanized," it declared. This marked a step toward the adoption of a new philosophy, but as the Second World War swept over much of the Western world, the report was hardly

Sentenced Women had debuted a new vision for women's prisons called Creating Choices. Emphasizing empowerment, the fundamental guarantee of respect and dignity, and the recognition that societal barriers played a major role in women's paths to prison, the task force recommended the closure of P4W and the creation of four separate regional facilities and a healing lodge. These new prisons were to include housing complexes that resembled cottages, ample time for women to spend outdoors, vocational training that also included vacation time, support for mothers, mental health and addiction treatment, and access to all levels of education, health care, and trauma counselling.

At the healing lodge, no weapons were used and the word "guard" was replaced with a Cree word meaning "aunt" or "older sister." (Elders at the facility were mostly women.) There were no fences: boundaries were instead marked by coloured cloths tied to trees. Under the Creating Choices philosophy, these facilities would focus less on punishment and more on recovery—a formula that would supposedly return happier, healthier women to society.

Unsurprisingly, many prison-reform advocates praised Creating Choices. But it was *The Fifth Estate's* footage of the strip search that helped change the larger public's opinion toward prisons. By the time P4W closed, the groundwork for Creating Choices was being laid. Federal officers put the last P4W prisoner, fifty-year-old Theresa Ann Glaremin, into a car on the morning of May 8, 2000. Several years beforehand, Glaremin, an Indigenous woman convicted of murder, described her prison experience in a poem for *Tightwire*, a journal created by P4W inmates. "Darkness never comes in prison," she wrote, "until they cut us down and carefully lay us in a body bag."

The new system was meant to prevent such experiences, but many prisoners, who had been given scant information on how the new facilities would work, felt apprehensive about leaving P4W. It was what they knew; some called it home. Glaremin told media, "I look at it this way: it's not a step backward, it's a step

forward. And that's how I have to look at it in order to get through it because I don't want to leave." Meanwhile, Canadian politicians congratulated themselves on leading the world in gender-sensitive correctional reform. The celebration, however, was short-lived.

ONCE CREATING CHOICES was accepted as the new guiding philosophy for women's prisons, its implementation fell entirely to CSC. And, though CSC appeared to embrace the idea of "healing," it did little to make that possible beyond building new facilities—facilities which immediately started to look less and less like the original vision for Creating Choices. As Arbour presciently noted in her report: "Despite its recent initiative [on reform], the Correctional Service resorts invariably to the view that women's prisons are, or should be, just like any other prison." The first evidence of this emerged shortly after the opening of the Edmonton Institution for Women, in November 1995. Not only did Edmonton open before construction was complete, with few programs in place, but CSC transferred a disproportionate number of maximum-security women there—many more than it was equipped to safely handle. Combined with the abrupt shift to the new approach, the move created a pressure cooker of untrained staff, scant security, and women with complex needs.

Within five months, there were escapes, more than a dozen incidents of self-harm, two suicide attempts, and one murder. Staff training and management practices hadn't changed to meet the new ideals, and the deteriorating situation in the prison hastened a return to dehumanizing methods of control. Many of the women there had also not been properly prepared to embrace the Creating Choices mandate—after years of trauma and incarceration, they were suddenly expected to resolve disputes communally.

The fault for all this did not lie entirely with CSC. Creating Choices had been reluctant to label women as violent or otherwise "difficult to manage" and thus did not plan for them, expecting a changed environment to be enough.

When it wasn't, CSC resorted to old tactics—segregation, maximum security, punishment—rather than working harder to ease the transition.

The mistake in Edmonton reverberated through the other new prisons. Openings were delayed in Kitchener and Joliette, Quebec, as CSC scrambled to increase security at the new facilities. Twenty five percent of total bed space in the other prisons was made more secure. Daycares and gymnasiums were eliminated. Eight-foot-high fences were erected. More cameras were installed. Segregation was reinstated; some women were, once again, temporarily confined in men's prisons. Under these impossible conditions, the responsibility for healing and reform was then placed on women themselves. Programming shifted away from individualized needs and toward parole-board requirements. Acknowledgement and analysis of systemic problems were abandoned in favour of fixing bad behaviour. To top it off, the government never funded the community services essential to Creating Choices.

Each error was like removing a block from a wobbly Jenga tower. Today, all evidence of the report's good intentions is gone, says Kelly Hannah-Moffat, a professor of criminology and sociolegal studies at the University of Toronto and the former director of the Centre for Criminology and Sociolegal Studies. Hannah-Moffat also acted as a policy adviser to Arbour during her investigation. It wasn't very long after P4W closed, she says, that CSC reframed the operational outcomes in Creating Choices as "ideals." Soon after that, even those ideals were discarded.

It's tempting to call this a failure of women's-prison reform, but Canada hasn't had much success reforming men's prisons either. Too often, reform fails because of contradictory objectives: preserving ideals of punishment and confinement while also offering healing and redemption. "They were attempting to change the way prison works," says Hannah-Moffat, referring to Creating Choices. "But prison is a fundamentally disempowering situation."

One of the saddest examples of this is Ashley Smith. In October 2007, less than

a decade after P4W closed, the nineteen-year-old was found unconscious at Kitchener's Grand Valley Institution for Women, a Creating Choices facility. She later died from what was at first ruled "self-initiated asphyxiation." Guards had watched her tie a ligature around her neck, but after intervening in dozens of similar incidents in the past, they had been ordered not to enter her cell so long as she was breathing. Smith had been in a youth facility since 2003, then segregated for the entire eleven and a half months she'd been behind bars, which included seventeen transfers between nine facilities. Contrary to Creating Choices values, Smith never received a psychological assessment and had scant access to mental health services despite multiple instances of self-harm. A 2013 inquiry ruled her death a homicide. Why was Smith first sent to jail? For breaching probation by throwing crab apples at a postal worker.

THE HISTORY OF PRISONS, and of prison reform, shows that neither approach has worked. People do not tend to find compassion in cages. Nor are they rehabilitated. Prisons exist, as one article puts it, "because we do not know what else to do." That failure of imagination is why Justin Piché has called prisons "impervious to reform." A professor of criminology at the University of Ottawa, Piché is also a founding member of the Criminalization and Punishment Education Project, one of several groups in Canada largely responsible for the renewed push to abandon prison reform altogether in favour of something more radical: abolition. Abolition argues for freedom—freedom for all genders and, usually, for all crimes. It argues that incarceration makes nobody better. In fact, it argues, prisons make people worse.

Recidivism rates—by which many people measure the success or failure of rehabilitation—are notoriously difficult to come by in Canada. The most recent federal numbers, released last year, look at the five-year period between 2007 and 2012. They reveal that, within two years of their release, 24 percent of men and 12 percent of women reoffend.

Other studies have found much higher recidivism rates when provincial sentencing is included, bringing the national number to over 40 percent. Individual provincial rates can be even higher—since 2001, for example, Ontario's recidivism rates have fluctuated between nearly 35 and 55 percent. "The paradoxical success of the prison (as a means of punishing the deviant) is dependent on its continuing failure as a place of rehabilitation," wrote University of Alberta sociologist Stephanie Hayman. "The prison cannot afford to succeed, because success would limit its power."

*Abolition would
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It doesn't have to be this way. Elsewhere in the world, reform has been more successful, largely because it hasn't been half-hearted, quickly discarded, or both. Norway's Halden Prison is held up as an example of true reform—one, incidentally, that has embraced many of the principles Canada failed to implement with Creating Choices. It has no bars on its windows, each inmate has their own cell, staff participate in activities alongside prisoners, and a wide array of vocational training is available, including a recording studio. The safety net upon release is wide: former prisoners are offered housing support, social assistance, and disability insurance. As a result of Norway's reformed prison system, recidivism rates are extremely low. In the Netherlands, a similar approach has created abolition-like conditions. As crime rates dropped, helped along by a pattern of shorter and alternative

sentencing as well as increased social supports, the country began to shutter its emptying prisons. By 2019, reported the *Independent*, it had closed more than half, and another four closures were scheduled.

The first step for abolition is a moratorium on building new prisons. Abolitionists argue the money is better spent on housing, health, and community programs, including models of restorative justice, which aims to heal the harm caused by crime, not punish those who cause it. After a moratorium comes something trickier: decarceration, or finding ways to get people out of prison. In the wake of COVID-19, abolitionists, as well as prisoners and health experts, have pushed to release as many prisoners as possible to stem the pandemic, which could be disastrous in packed prisons, where physical distancing is impossible and health is already poor. In one Laval federal prison, 162 cases and one death were confirmed by the end of June. By July, more than fifty inmates at Quebec's Joliette Institution for Women had contracted the virus. One Ontario jail temporarily shut down in mid-April after sixty inmates and eight guards tested positive. Instead of releasing inmates, the prison simply transferred them. "If they continue to batten down the hatches and wait for the storm to pass," said Piché in April, referring to Prime Minister Justin Trudeau and Minister of Public Safety Bill Blair, "the only depopulation of penitentiaries will be through hospitalizations and deaths in custody."

With the help of lawyers, abolitionists have had success securing release for prisoners convicted of nonviolent crimes, those near the end of their sentences, and those in remand custody. Since the outbreak, Nunavut has released more than twenty prisoners from an inmate population of 144, prompting the CEO of the Legal Services Board of Nunavut to ask: "If it was safe to release these people, why were they ever detained in the first place?"

Questions like these have introduced the last step of abolition—excarceration—into the conversation. Excarceration involves putting in place the

necessary social supports to ensure that people who have been incarcerated never return and those who haven't been never are. In short, it means nobody would ever go to jail or prison again. Such a move would profoundly change the way we view crime, accountability, rehabilitation—and even redemption. For all these reasons, it's often the hardest step for people to support. People who may agree that prisons are bad places often want a way to lock up Canada's most notorious: Paul Bernardo, Karla Homolka, Robert Pickton, or Luka Magnotta. Even among abolitionists, this is where things get sticky, with some believing in absolute abolition and others, like researcher Sandra Bucerius, believing some individuals can't integrate back into society.

Canadian senator Kim Pate understands many people's knee-jerk "do the crime, do the time" reaction. If not for jails, what would we do with our murderers and rapists? As a law school graduate, she once felt that way herself. But, after witnessing the fallout of a failed system, she began advocating against the idea of incarceration as a one-size-fits-all answer to crime—particularly for women, who are more likely to be survivors of violence rather than its perpetrators.

For Pate and other abolitionists, the real question comes back to: What could we do with all the money spent on imprisoning people if we thought creatively? If we weren't basing an entire system on the few truly evil crimes? Though the dream of Creating Choices ultimately failed, Pate believes it got one thing right: women need a solution as unique as their challenges. "I don't believe sitting here biding our time is helping anybody," says Treena Smith. "I believe in rehabilitation and in helping people find some peace within themselves again."

IN 2018, Pate met with Smith and several other women in the Central Nova Scotia Correctional Facility. Over several days, the senator dared them to think outside the prison box, past traditional ideas of reform and failed solutions like Creating Choices. In response, the women imagined something called From the Ground Up. With markers and Bristol

boards, they sketched out the vision of a community that would exist on a wide plot of tree-studded land. It would have no fences, no guards. It would be rich in mental health and addiction programs. Staff would include women who had been inmates as well as people with experiences similar to those of the women they were helping. It would create jobs for women who'd been through its programming, sending them to school. Most importantly, it would be a place women could go instead of prison, maybe even before they ever committed a crime.

Eventually, the women began to wonder why From the Ground Up couldn't happen. Soon, they were sharing their plans with legislators, architects, urban planners, even prison staff. Their momentum is captured in the documentary *Conviction*. Released last year, the film features the experiences of Smith and several other women inside the penal system, as well as their fight to make From the Ground Up a reality. Not only did directors—Ariella Pahlke, Teresa MacInnes, and Nance Ackerman—spend three months following the women's lives inside the Central Nova Scotia Correctional Facility and Nova Scotia Institution for Women but they gave camcorders to prisoners so that they could film their lives on the outside. The women featured in the doc also had control over what footage could be used in the final cut. Such trust, collaboration, and access was so unprecedented that guards and prisoners alike found the experience life-changing.

Shortly after the film wrapped, Tanya Bignell stopped working at her correctional facility. Part of why she left, she says, was to dedicate more time to From the Ground Up. While Bignell may seem like an unlikely ally, she was always "on the fence with the way things are run." After a decade as a correctional officer, she herself began to feel institutionalized, living a split reality inside and outside the prison—except, she realized, unlike her charges, she could go home at the end of the day. She's been diagnosed with PTSD, a condition linked with her other reason for quitting: the job compounded her trauma. She remembers

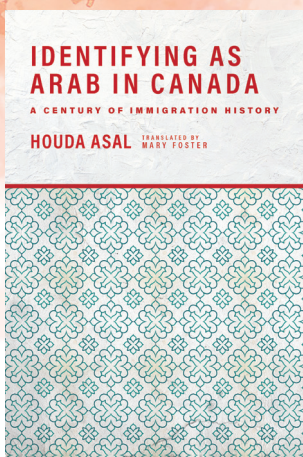
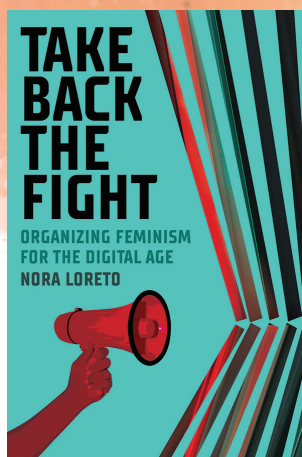
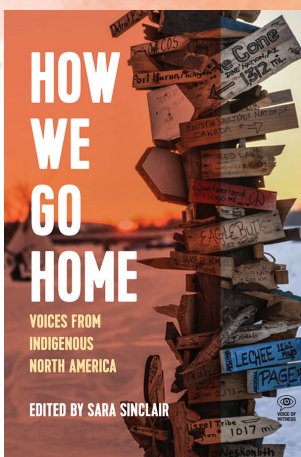
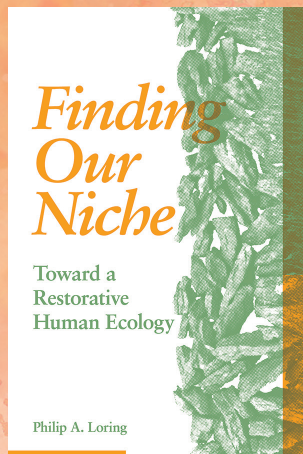
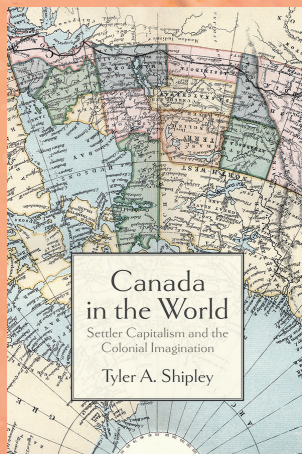
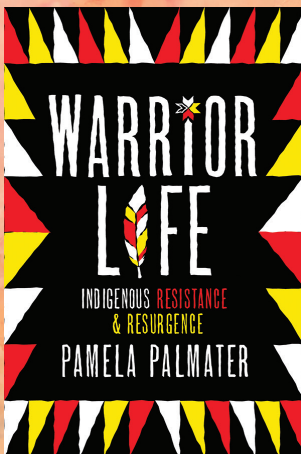
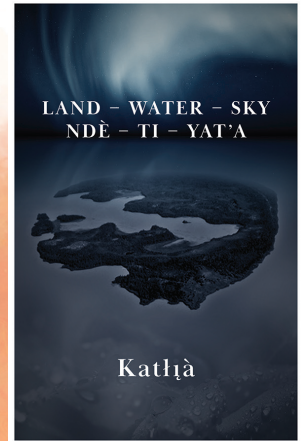
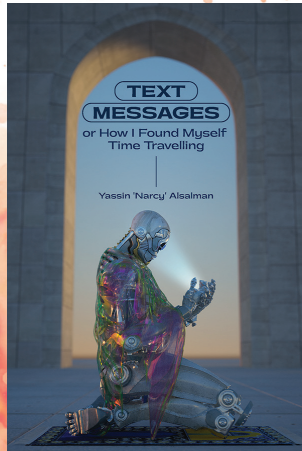
strip-searching a woman who had been assaulted. It was the woman's first time in jail and, at news of the search, she broke down. Bignell assured her that she wouldn't touch her but knew the search was going to happen whether or not she was the one to do it. It was yet another example of how, as Hayman wrote, "the prison always triumphs."

So Bignell teamed up with former prisoners to find a better way. One of her most ardent colleagues was Bianca Mercer, an inmate with a history of trauma and drug abuse. In 2016 and 2017, Mercer was incarcerated while pregnant. At six months, after weeks of solitary confinement, she was transferred from the jail where Bignell worked into a housing program. There, in mid-May, she gave birth to a stillborn child. She vowed never to go back to jail. And she hasn't. I spoke with Mercer last January, just short weeks after the healthy birth of her daughter. Mercer was enrolled in college and leading the charge to get From the Ground Up built. Her vision emphasized individualized programming and extended support while women transition into their own homes. Women could stay in the program for as long as they needed to. They would never send someone away with little more than a bus ticket and a "good luck" wish. "Jail doesn't work because it's based on punishment," she says. "They say there's rehabilitation involved, but I never had any help."

From the Ground Up Women's Wellness Society was incorporated on February 6. Of course, it's still just a concept, and even if the community is eventually built, it's only one alternative in a country full of prisons. Mercer, Bignell, Smith, and others all know From the Ground Up has a long way to go before it replaces incarceration. And, for now, COVID-19 has put their plans on pause. But that first step remains extraordinary, a rare case of the prison system actually doing what its founders envisioned centuries ago: it made something better. ☺

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LAUREN MCKEON's most recent book is *No More Nice Girls: Gender, Power, and Why It's Time to Stop Playing by the Rules*. She is the deputy editor of *Reader's Digest Canada*.

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BY THOMAS HOMER-DIXON

ILLUSTRATION BY ALEX MACASKILL

BEING A PARENT of young children, I've happily discovered, means getting a second chance to do things I missed in my own childhood—at least the things that won't leave my body in splints and braces. I've had particular fun spending hours reading children's classics aloud to my kids, stories I'd skipped when I was young or that hadn't been written yet—L. M. Montgomery's *Anne of Green Gables*, Kenneth Oppel's *Airborn* series, Philip Pullman's *His Dark Materials* trilogy, and, of course, all seven volumes of the original *Harry Potter* series—twice.

One tome that I'd never mastered was J. R. R. Tolkien's *The Lord of the Rings*—science fiction interested me far more than epic fantasy and myth. So, when I opened volume one, *The Fellowship of the Ring*, on an icy December evening in 2013, cuddled with then eight-year-old Ben in an armchair, I wasn't exactly a study in enthusiasm.

Tolkien isn't for everyone, that's for sure. *The Lord of the Rings* is in many ways a prototypical hero's journey, full of daring adventures, bloody battles, and much valour to protect honour, friends, tribe, and the truth. With only a couple of notable exceptions, powerful,

courageous, or clever women don't cross the pages. And, even taking into consideration the genre's prevailing style, Tolkien's prose is—how to be polite?—a tad laboured.

Yet I was soon enthralled. The saga captivated me in some primal way, as it has so many others. And, by somewhere in the middle of the first volume, I realized why I was hooked. *The Lord of the Rings* is an extended meditation on what one should do when things appear utterly hopeless. It is, in fact, an account of how to survive by creating and living through hope. Such hope is informed by an attempt to understand the minds of people we encounter—friends, allies, and enemies—as we strive to reach our vision of a positive future. And it employs that knowledge in ways that are strategically smart.

If you're not familiar with the story, here's the gist (and bear with the recap—it is relevant!): the Dark Lord Sauron has established himself in Mordor, a forbidding, barren, and mountainous domain in the eastern regions of Middle-earth. From there, he's sent forth his brutal servants to find and bring to him the One Ring, which will give him unassailable power over the land. But that ring is currently in the possession of Frodo, a middle-aged hobbit—a short, peaceable, human-like creature

with very hairy feet (to my son's delight). The wizard Gandalf tells Frodo that the only way to keep the ring from Sauron forever is to take it into the heart of Mordor itself and throw it into the volcanic fires of Mount Doom.

The plan seems absurd. Not only does the ring corrupt nearly everyone who touches it (although it seems to have less effect on hobbits), Mordor seethes with teeming masses of vicious creatures called Orcs, spectral beings on flying beasts, and various other soldiers, all overseen by Sauron's panoptical eye atop a black tower that reaches far into the sky.

To make matters worse, the Free Peoples that populate Middle-earth outside of Mordor—which include Elves, Dwarves, and Men—have squabbled among themselves for centuries. Even if they could somehow manage to pull themselves together, their collective armies aren't strong enough to penetrate Mordor's mountainous defences to reach Mount Doom, while the idea of sneaking past Sauron's vast forces and under his watchful eye seems preposterous. The situation is surely hopeless.

But it's not, we learn. Getting the ring to Mount Doom and defeating Sauron involves a healthy portion of luck and a good quantity of magic (the tale is, after all, a fantasy) but also an enormous



amount of emotional, interpersonal, intercommunal, and strategic smarts.

Early on, a team is formed—the Fellowship—to solve the problem. It's a cantankerous bunch that often comes close to breaking apart. But it incorporates at least one representative from every major people Sauron threatens. Over time, and under extreme duress, they learn to respect and even love one another. Equally important, though, is the mix of talents the team possesses: each member contributes something vital to the enterprise's ultimate success.

At first, none of them has a clue how to get the ring to Mount Doom: the further they peer into the future, the worse the

uncertainties become. As Elrond, the Half-elven Lord of Rivendell, advises: "None can foretell what will come to pass, if we take this road or that." So they keep their initial plan simple and start by exploring the adjacent possible—that zone of uncertainty just beyond the edge of the known—by taking one step toward Mordor at a time. They recognize that they must figure things out as they go, constantly recalibrate their plans as they learn more, and manage their doubts and fear. Along the way, they wonder if they should turn back; divert themselves to lesser, more achievable goals; or split up and return to their homes to defend their respective groups against the coming

storm. What little hope they have is under incessant siege.

The Fellowship is soon sundered by duplicity from within and attacks from without. Later, some members reunite and then split apart again, while Frodo and Sam seek to reach their destination alone. Still, every other member of the team repeatedly deliberates on how to help the quest and—even in the absence of communication among them—acts on those deliberations. The story's climax arrives when most of the team, together again, takes what remains of their armies to Mordor's front door to distract Sauron so Frodo and Sam can climb to the top of Mount Doom unobserved. Beforehand, the team debates at length the ridiculously low odds of their plan's success. They know it's a huge gamble—the equivalent of a Hail Mary pass—that depends on their estimates of Frodo's physical and mental state and of his location on the slopes of Mount Doom being exactly right.

No surprise, their estimates are correct, the One Ring is destroyed (albeit somewhat by accident after Frodo yields to its powers), and Middle-earth is more or less saved, although profoundly and irreversibly changed. Good wins, sort of, and evil is vanquished, at least for the time being, as I learned when I turned the third volume's last pages, eight months later, snug in a tent with my family in the pouring rain during an August camping trip.

A DEEP DIVE into Tolkien's classic fantasy might seem a little out of place in a sober investigation of hope. But his story is not timeless without reason. It shows that, for our hope to be powerful, we need a clear, motivating vision of where we want to go, a way of identifying which paths to take, and a thoughtful understanding of the worldviews and motives of the people who can help us along the way—and of those who might try to stop us. It also reminds us that we'll be far more effective if we're ready to recalibrate our vision, our judgment of the best paths forward, and our assessments of others' views as we go along.

Hope is unquestionably one of Tolkien's central concerns in *The Lord of the*

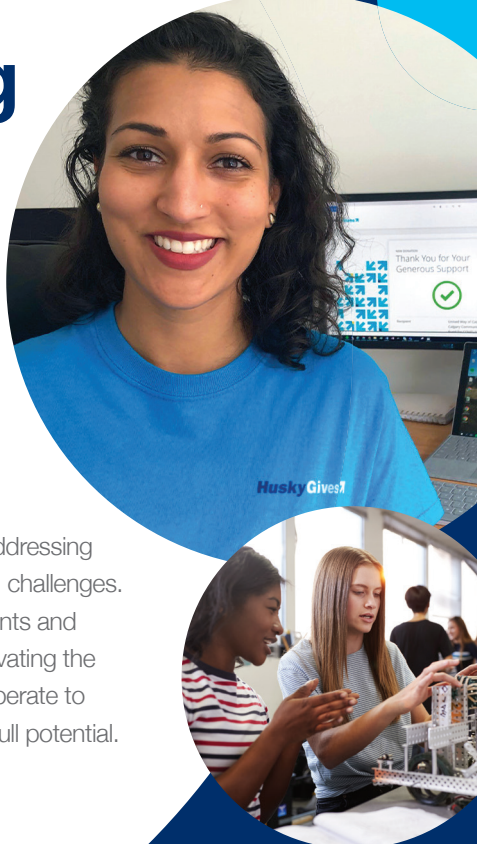
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Rings; the word itself appears, by one count, about 300 times in the book's three volumes. Tolkien, a scholar with a vast knowledge of history and myth as well as a keen observer of human nature and our moral struggles, had been deeply marked by the First World War, having fought as a young officer in the Battle of the Somme and lost almost all his male friends to the war. Also, he wrote *The Lord of the Rings* in a time and place—England around the time of the Second World War—when hope was under siege and eventually rescued through almost unimaginable courage, toil, and sacrifice, and with the help of many allies. We tend to forget how bleak the situation must have looked to Tolkien and his compatriots in the early days of the war, when England, isolated on the edge of Europe, stood almost alone against Hitler's staggering forces.

Tolkien later dismissed attempts to draw allegorical parallels between those events and his story. Yet they may have helped him arrive at his sophisticated and subtle understanding of hope, which was revealed in unpublished writings edited and released posthumously by his son. In a conversation about hope that Tolkien crafted between an Elf king and a wise woman, he distinguished two kinds: "Amdir," a hope that involves "an expectation of good, which though uncertain has some foundation in what is known"; and "Estel," a deep hope born of trust or faith that things will turn out well. When Amdir succumbs because we see no escape, Estel can remain steadfast.

Many Christian commentators and scholars say Tolkien espoused a Christian hope based on faith in redemption and God's ultimate intervention. (He was a devout Roman Catholic.) By this view, hope, which in this case would be Estel, can remain secure because we know God will take care of us in the end. Other Tolkien aficionados have argued that he eschewed hope entirely: his protagonists keep going because of nothing more than their ardent commitment to courage and cheer regardless of what the future seems to hold.

Neither argument convinces me. I see little hint of Christian eschatology in the pages of *The Lord of the Rings*, and

the book's life philosophy is deeply informed by Norse, Germanic, and Celtic myth. Indeed, to my mind, Tolkien's heroes possess the Finnish virtue *sisu*, which translates roughly as "fierce tenacity" or "toughness" and indicates inner strength in the face of daunting odds. Tolkien's protagonists regularly express, as well, something akin to Amdir, a hope grounded in evidence and reason. They might think that the chance of a good outcome is terribly slim, but they pursue that chance all the same, with eyes fully open to the risks such a choice entails.

But mostly I'm not convinced because, in the book, Tolkien argues time and time again for another source of hope. He identifies this source most clearly in Gandalf's remarkable words to the Council of Elrond when the Fellowship is formed. Pressed on whether the effort to take the ring to Mount Doom is a path of despair or folly, the wizard replies, "It is not despair, for despair is only for those who see the end beyond all doubt. We do not. It is wisdom to recognize necessity, when all other courses have been weighed, though as folly it may appear to those who cling to false hope."

Honest hope, Tolkien implies here, emerges from the wisdom that recognizes necessity. Critically, though, within the boundaries imposed by that necessity, we can't know for sure what will transpire—we can't "see the end beyond all doubt." And it's there, within that deep uncertainty, that we can find Estel, a hope that trusts in the world's complexities to produce as yet unseen possibilities, some of which might be good.

Tolkien seems to suggest that people keep going in dreadful circumstances through a combination of, or sometimes an alternation between, Amdir and Estel. Amdir is hope with an object—"an expectation of good" arising from a vision of a positive future. But whether this vision will ultimately be realized is highly uncertain given "what is known." Estel, in contrast, doesn't have an object: the solace it provides arises instead from its confidence in uncertainty's promise, all the while acknowledging that this promise may not, ultimately, be realized in something good.

Throughout *The Lord of the Rings*, Tolkien also implicitly asserts that hope (in this case, Amdir) should be smart. For our hope to be smart, we need a strategy for quickly and effectively searching the adjacent possible to identify—and provide rough-and-ready evaluations of—possible paths forward. When the range of paths is immense, as it was for the Fellowship, this search will often work best when undertaken by a highly diverse group of agents (like the Fellowship's members) linked together in a loose network (so that each agent has a chance to discover new possibilities and then share that news with everyone else), guided by rough goals, and open to constant reformulation of its plans. This approach is, in fact, how complex systems as diverse as competitive economic markets and the immune systems of mammals solve their problems—it's usually the most effective way to find good possibilities amid a welter of noise, distraction, and false leads.

Tolkien seems to have grasped this reality. But he then gave a special twist to the idea: we should often look for good possibilities, he advises, in the opposite direction of what seems to make most sense at the time. So, rather than fleeing from Sauron's massed forces in Mordor, which common sense would seem to counsel, perhaps the Fellowship should go straight toward them. And, rather than attacking Sauron directly, with all the armies the Fellowship can muster, perhaps the Fellowship should send in only one or two of the least formidable beings in the land. In other words, seek solutions in unexpected places.

Finally, Tolkien shows that hope needs to be emotionally and psychologically smart too. The story's protagonists discuss at length each other's characters, perspectives, and intentions, just as they discuss those of their potential allies and likely enemies. They anchor their decisions in a keen awareness of what's going on in their own heads—of their own beliefs, values, and deep motivations—and, as much as possible, of what they think is going on in the heads of the people and groups who might align with or oppose them.

LIKE TOLKIEN'S Fellowship, today's children and adults face a landscape of possible paths into the future that is, frankly, terrifying in its complexities and risks. If we're going to choose a good path—good not just for ourselves narrowly but for all of humanity—we need discriminating criteria for selecting among the multitude of options we face.

Here are two criteria: first, any path we choose should take us toward a future that's likely, as best we can judge, to be enough of an improvement to genuinely reduce the danger humanity faces; and, second, the path should also be feasible in the sense that it gives us a good chance of reaching that desirable future, which means surmounting or bypassing any political, economic, social, or technological roadblocks along the way. These criteria are often at odds, leaving us trapped in what I call the "enough vs. feasible" dilemma.

People who care about humanity's future and want to do something to help generally cope with the dilemma in one of two ways. Some who are idealistic—

such as activists in civic groups and many academics—focus on making sure their proposals for solving humanity's problems would be enough. They largely ignore whether the proposals are feasible, implicitly downplaying political, economic, social, and technological obstacles to their implementation. They hope either that those obstacles will turn out to be far less severe than seems likely or that a new social phenomenon will sweep them aside. Basically, they say: We should start now to do *whatever's necessary* to solve the problems, and deal with obstacles to implementing our solutions later, if it turns out that we must.

Others—politicians, policy makers, corporate leaders, and researchers in think tanks, for example, who all tend to see themselves as anchored in the practical world—focus on making their proposals feasible and largely ignore whether they'd be enough. They tend to highlight the obstacles to implementing solutions, implicitly hoping that the problems themselves will turn out to be far less severe than evidence today indicates is the case—or easier to solve

sometime in the future, maybe with a technological breakthrough. Basically, they say: We should start now to do *whatever's possible* to solve the problems, and deal with whatever remains of those problems later, if it turns out that we must.

Both groups, in other words, cope with the dilemma by implicitly ignoring or wishing away the side they don't like. They either posit changes in our societies and technologies that seem far-fetched (a kind of magical thinking) or they deemphasize the seriousness of humanity's problems (a kind of denial). Each group lives in its own la-la land while blaming the other for wasting time and resources on fantasies or for not doing enough. And, as humanity's situation worsens, the gulfs between these la-la lands and our increasingly troubling reality are becoming positively pathological.

Neither approach is far from the "what if" imaginings of kids, which could be good, except that they both neglect the tempering realism that ideally comes with adulthood.

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THE PROTAGONISTS in *The Lord of the Rings* face a version of this dilemma. The single action that would be enough to stop Sauron forever—throwing the ring into Mount Doom’s fires—doesn’t seem feasible, at least on first assessment. Yet other actions that *could be* feasible—trying to hide the ring in the countryside, giving it to the ancient creature Tom Bombadil, or dropping it into the deep sea—ultimately won’t stop Sauron.

The Fellowship’s dilemma seems impossibly difficult, but it’s actually more tractable than humanity’s version today. First and most obviously, Tolkien creates for his group of heroes a conventional “war problem”: an external and wilfully malicious enemy threatens the group with annihilation, which catalyzes its members to bury their differences and collaborate to defeat the enemy.

In contrast, today’s enemy isn’t “out there” but at least partly “in here,” right inside our own societies, communities, families, and even our individual selves. Our severe problems are rooted in factors like bad technologies, poorly designed

institutions, greedy corporate elites, self-aggrandizing states, self-interested consumers, and ingrained patriarchy and racism. As in the sinking lifeboat, nearly all of us have contributed somehow—if to greatly unequal degrees—to the dangers we’re facing. To quote the wonderful mid-twentieth-century American cartoonist Walt Kelly, “We have met the enemy and he is us.”

But, in *The Lord of the Rings*, Sauron isn’t just an external, personified enemy; he also creates for the Fellowship what social psychologists call a “superordinate” goal—one that everyone shares, that overrides all others, and that can’t be achieved without cooperation. These features encourage teamwork among the members, and this teamwork makes reaching the goal—to throw the ring into the fires—far more feasible, which ultimately helps the Fellowship solve their enough vs. feasible dilemma. (In the classic demonstration of the power of superordinate goals, the Robbers Cave Experiment, antagonism between two groups of boys at a summer camp was significantly reduced when, among other collaborative tasks, they

had to pull on the same rope, together, to get their food truck restarted.)

Today, though, humanity has a profusion of big problems. Worse, because of both deep uncertainty about the future and bitter ideological differences among us, we heatedly disagree about what our problems are and their severities, about whose responsibility they are and to what extent, about what their solutions should be and whether those solutions would work even if we could implement them. Alas, compared to the Fellowship’s situation, ours is a massive muddle. Instead of drawing us together, this muddle often just splits us further apart, which only further erodes our ability to find effective and feasible solutions and, in the end, erodes our hope too. Tolkien, for all his understanding and smarts, can’t take us all the way. 📖

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THOMAS HOMER-DIXON is a political scientist and a professor. His latest book, *Commanding Hope*, from which this has been excerpted and adapted by arrangement with Alfred A. Knopf Canada, a division of Penguin Random House Canada Limited, is out in September.

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ESSAY

THE HUNGRY PEOPLE

Non-Indigenous people like to go on about the technologies colonizers brought to the Americas. But what of the innovations they took away?

BY ROBERT JAGO

ILLUSTRATIONS BY MARIAH MEAWASIGE / MAKOOSE

THERE ARE MAGGOTS inside my gloves—this I discover after a few minutes of wear, when I get a prickly feeling in my fingertips. I quickly take the gloves off, flip them inside out, and rinse them in the river. I’m making my best effort at being tough and unflappable because I’m out with the Stó:lō fishing fleet and fishers, as a rule, are tough.

The gloves go back on. I reach into the net and pull out another writhing, surprisingly strong salmon. It’s the summer of 2018 and I’m on a flat-bottomed boat with just enough space for a very large ice-filled fishing tote, a couple of helpers, and the captain, all of us members of various Stó:lō First Nations—the group of First Nations stretching along the length of the lower Fraser River and into Metro Vancouver.

The salmon goes from the river to the net to the tote, all the while heaving its body back and forth. Blood, ice, and water spray when the lid on the tote comes up—enough gets in your mouth that you can taste the salt of it. This is fresh water, so that salt taste is blood. The nausea from the maggots is a distant memory now.

As our boats come in, trucks swarm us, non-Natives looking to buy our fish. Our tote might hold \$2,000 worth of salmon, but every bit of it is already earmarked for

various family members, and the government’s put off signing the contract that would allow us to sell any extra, anyway. That night, as we’re washing down the fishing gear, we overhear a TV reporter talking about us. We get to the TV in time to see the news crews bothering people who are unloading their boats. A spokesperson from the Department of Fisheries and Oceans (DFO) accuses us and other Stó:lō people of illegally selling our fish, which we’re meant to keep only for our consumption. Later, in a written statement, a federal official refuses to use our First Nations name but refers to us by the name of the adjacent non-Native town: “Lower Mainland fishery officers, particularly in Langley area, have been receiving a significant volume of public complaints around rampant and open illegal sales of fresh salmon.”

Adding insult to injury, the statement tacks on a warning to the unsuspecting public, telling them that we don’t know how to handle the fish properly; they advise that any salmon bought from us poses a “significant risk to human health.” Our catch is fine for us to eat, apparently—it’s just a problem for “human” health.

Stó:lō means “river people,” and this river is full of salmon—or, at least, it used to be. It’s our staple food, eaten smoked, baked, boiled, and candied. My grandma prized the eyes, plucked out and sucked

on till they popped and released their fishy goo. My nephew goes for the eggs; he quite literally licks his lips at the sight of them. My uncle takes the best cuts to smoke outdoors with a closely guarded, centuries-old family recipe.

It takes a lot of nerve to say we don’t know how to handle salmon—but I suspect the reality behind that claim is that a great many Canadians can’t imagine us knowing anything independently, as Native people. It’s a way of thinking that is common enough among non-Natives, going all the way back to Christopher Columbus, who, describing his first encounter with “Indians,” gave us the backhanded compliment: “These are very simple-minded and handsomely formed people.”

Pretty and dumb.

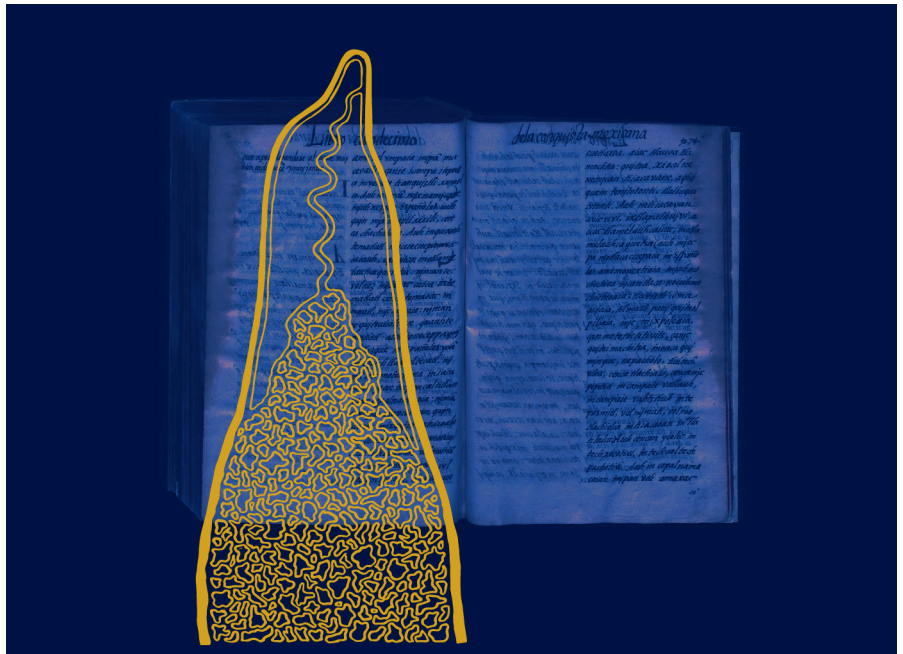
Canadians, Americans—all of them treat us as the poor cousin of the human race. We’re seen as inferior Stone Age people, incapable of inventing or creating or even running our own lives. Look at how Indian Affairs or Indigenous and Northern Affairs Canada or Indigenous Services puts training wheels on our nations: thanks to the Indian Act that variously named department administrators, we have less freedom to act than a local housing co-op board. Look at how the DFO talks about us as if we were dangerous incompetents. Non-Natives act like we entered the world the day after

they landed on Plymouth Rock, like they brought us into creation and are teaching us to be almost but not quite as good as them.

It's a sentiment expressed openly in a 2012 editorial from a small-town Alberta newspaper, which declared, "It is our obligation, as trained and educated citizens, to become more involved with First Nations peoples and guide them towards becoming more responsible citizens." The writer went on to ask, "Are First Nations people capable of understanding and assuming these responsibilities?"

Another way of saying that we're pretty and dumb is to praise us for the "light touch" we have had on our environment. "The native people were transparent in the landscape, living as natural elements of the ecosystem." That assessment doesn't trace back to Columbus, though, or even to those first colonizers. That was Smithsonian botanist Stanwyn G. Shetler, writing in 1991, for the occasion of the 500th anniversary of Columbus's voyage. In effect, he and many others think that we had the same impact on our continent as squirrels—which is to say that, even though we were here, we didn't occupy our land in any meaningful sense. It belonged to nobody.

Sadly, that view of Canada and the Americas as *terra nullius*—no one's land—dominates among non-Natives.



But what do the facts say? The facts say that, far from them bringing us into the world, and far from us being the pretty and dumb cousin to proper humans, it was only with our knowledge and creations and work that their world was able to come into existence in the first place. They didn't hand us the keys to the modern world—they took from us the tools that built its foundations.

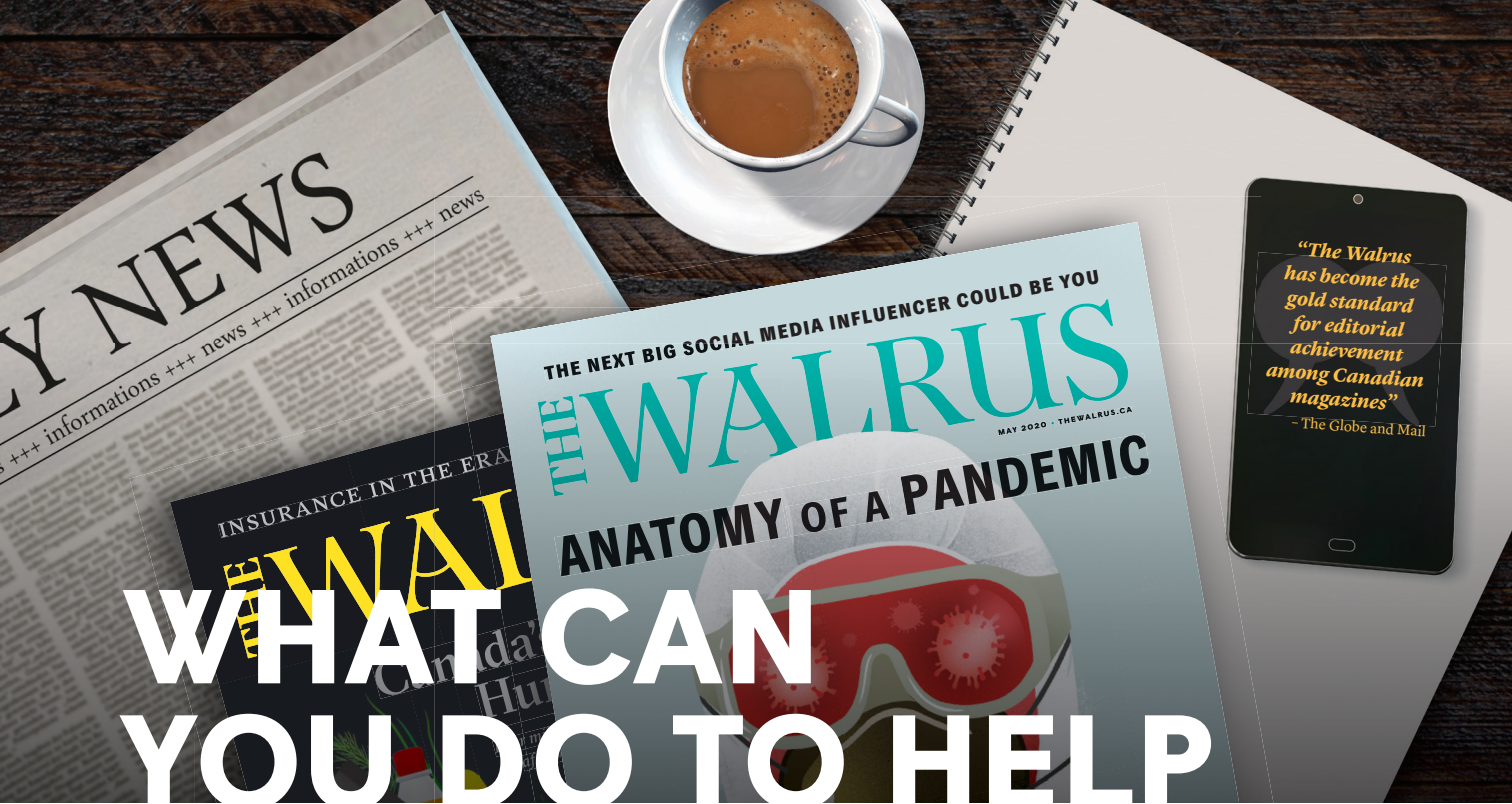
THE SPOKESPERSON for the DFO didn't emerge out of the earth fully formed: they and their way of thinking came from somewhere. Look

to the person who trained them, and the one who trained them. If you keep going back, one boss after another after another, you will eventually end up, at noon on Monday, July 30, 1827, on the *Cadboro*, a schooner owned by the Hudson's Bay Company that has anchored in the Fraser River—for us Stó:lō, this is where Canada begins. The boat carries a mix of Quebecois, Hawaiian, British, Métis, Abenaki, and Iroquois labourers. These men have come to build Fort Langley, where British Columbia will one day be founded as its own colony. But—though their descendants might tell you the land was untouched—they are in S'olh Temexw and they work opposite Kwantlen, which is my home First Nation. The construction they start that day is the first act of foreign rule in our country.

George Barnston was a surveyor for the Hudson's Bay Company and an important (if undervalued) member of the *Cadboro's* crew. One of Barnston's duties was to keep Fort Langley's logbook, a diary of sorts. Back in July 1827, Barnston briefly mentioned the settlement but spent the majority of his entry discussing the fishing practices of my ancestors and the ancestors of those I was catching salmon with:

We procured from the Indians today for the first time a supply of fresh sturgeon, which are as large here as





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in the Columbia. The Spears made use of in killing them are sometimes fifty feet long, running into a fork at the end, on the two claws of which, are fixed Barbs pointed occasionally with iron, but oftener with a piece of shell. When the fish is struck the Barbs are unshipped, and being attached in the middle by a cord which is carried along the spear and held by the Fisherman, they are drawn across the wound in the same manner as a Whale Harpoon, and the Fish when exhausted is drawn up and killed.

It makes sense that the very first meaningful interaction between our two peoples was about food harvesting. It is alluded to in our name for them: *xwel'tem*—the hungry people. Our ancestors gave that name to the starving white miners who came begging at our towns for food during the first winter of the Fraser River gold rush, and it's a name that has come to be used for all non-Natives.

On Tuesday, August 14, Barnston records the ongoing construction of the fort and the first purchase of dried salmon from our people. That salmon would undoubtedly have come from my family's stores and would be prepared in the same way as now.

How to prepare a salmon: *the fish is gutted and the head and tail are removed and saved, along with the roe. The sides are then salted, rubbed with a mixture of local herbs (the secret part of the family recipe), and roasted over a fire for five minutes per side before being cold smoked over cedar. When complete, the flesh is slightly sticky and sweet—smoky, but not too much.*

Stó:lō of that era ate their salmon with a salad of local greens, berries, and a root vegetable called skous, which tastes similar to a Yukon Gold potato. Barnston records the skous-harvesting season in his journals along with many other natural observations. His time in my country inspired him to become a naturalist. He amassed a vast collection of flora and fossils from the Americas, specimens that are housed at Montreal's Redpath Museum and have found their way into

the collections of the Smithsonian and the British Museum.

While in my country, Barnston married Ellen Matthews, the daughter of a fur trader and a wealthy First Nations merchant from the Chinook town of Clatsop, Oregon, which is down the coast from Fort Langley. (Clatsop is an anglicized Chinook word, *lät'cəp*, which means “place of dried salmon.”) They had eleven children, the two most notable being James Barnston and John George Barnston. James earned a degree in medicine and was

IF YOU HAVE A MOMENT, browse Wikipedia's “Timeline of Historic Inventions.” It includes the cultivation of rice in China, the invention of the wheel in Mesopotamia, and hundreds of other creations from all over the world—but none from the Americas. Believing that we're transparent in the landscape renders our achievements invisible to the world. Redo the timeline with a knowledge of our peoples, and the cultivation of corn and potatoes will earn a mention, and the creation of the



the first curator of McGill's herbarium, which the university now advertises as “the oldest research museum of dried plant specimens in Canada.” John George Barnston ran, successfully, in an 1872 by-election, which becomes very significant if you remember that his mother is Ellen Matthews, daughter of a Chinook merchant—making John George one quarter First Nations and the (hitherto uncredited) first Indigenous person to serve as a member of the BC legislature.

John George would likely reject that distinction: the Barnston children appeared to be entirely alienated from their Indigenous heritage. This is exemplified in James's description of the pursuit of botany in a lecture to his students at McGill. The Canadian wilderness, he told them, is a “paradise . . . filled with creatures yet to be named.”

three-dimensional khipu writing system will appear. The invention of spindle whorls among the Salish, Aztec mathematics, and Haudenosaunee constitutional federalism will all have a place.

Contrary to what people like Barnston thought, we have names for everything here—many of them representing achievements that should have a place next to any Mesopotamian creation. These names persist even today: potato, maize, avocado, tomato, tobacco, chocolate, quinoa, quinine, cocaine, and many more. Things created by Indigenous peoples.

Research in recent decades has shown the extent to which the environment in the Americas was crafted by Indigenous people. A 2017 study, published in the journal *Science*, found that the single greatest artifact of Indigenous

I Know I've Reached Peak Shane

BY SHANE BOOK

You live in a pigeon pen above a
series of car repair shops
and love motels for a while—
then come talk to me.
Real talk: this run-by-Queen-Victoria
British Empire outpost
of the history of the goddamn
complete world
—opium, Scottish
Presbyterian gangster shit,
the main flavour
profile for toothpaste, incidentally.
What a charge. Hit the gas so hard
make it rotate. I'm not
no Airbnb nigga,
I went to driving school,
drove a plug-in hybrid
sports car by Porsche
in my mind, 918 Spyder
maximum torque insect in my mind,
fastest electric coffin ever maimed.
All my niggas blew up like a propane
except me.
The cockpit is above
the mounds of fabric, ruffling
my waxen face.
I have a great LeBron face
for you.
And you, and you, and you.

agriculturalists is the Amazon rainforest: researchers identified eighty-five different fruit- or nut-bearing trees that were domesticated by the Amazon's Native inhabitants. What is seen by some as a wilderness is actually, over large tracts, an overgrown orchard—one made wild by the disease and depopulation that came with European contact.

The process of domesticating plants is what turned a bitter red berry into strawberries. It's how the people of the Balsas River Valley, in southern Mexico, turned a wheat-like grass with small

grains, called teosinte, into corn. It's how ancient civilizations from Ancón-Chilló, in modern-day Peru, made a relative of toxic nightshade into potatoes. It took the raw ingredients of this continent and, through the patient work of generations of Indigenous farmers, created half of the fruits and vegetables cultivated in the world today. Pretty and dumb, indeed.

Native innovation and technology also developed new ways of growing food. It was the Quechua who pioneered the use of “wanu,” or guano—nitrogen fertilizer made from bird droppings. Wars

were fought and empires built when the foreigners discovered its value: in 1856, the US passed the Guano Islands Act, granting any American citizen the right to seize any unclaimed island anywhere in the world if it was found to have guano on it. It's thanks to that fertilizer (and the artificial versions of it that followed the resource's depletion at the end of the nineteenth century) that non-Native farmers caught up with their counterparts in the Indigenous Americas and more than doubled their agricultural output in the course of a century.

European farmers of the sixteenth and seventeenth centuries had to leave as much as half of their fields empty at any time so as not to exhaust their growing potential. They were also overreliant on grain as one of their few sources of nutrition. The result was that, in England alone, between 1523 and 1623, there were seventeen major famines. The addition of Indigenous agricultural methods and foods domesticated by Indigenous people changed that. Where in the past, a study in *Nature* found, European farmers could feed 1.9 people per hectare, with our help they could now feed 4.3. Writing in *Smithsonian Magazine*, Charles C. Mann concludes that, with Indigenous peoples' sharing of their domesticated foods and agricultural technology, “the revolution begun by potatoes, corn, and guano has allowed living standards to double or triple worldwide even as human numbers climbed from fewer than one billion in 1700 to some seven billion today.”

These foods and technologies weren't gifted to Europe: they were sometimes stolen, but often they were the objects of trades, like those Barnston was tasked with documenting at Fort Langley. On Thursday, August 2, 1827, Barnston records the following exchange: “Two hundred weight of sturgeon was traded for, with red baize, axes, knives and buttons which, with the exception of blankets and ammunition, are articles in greatest request with the Indians here.”

Barnston is describing a trade that forms part of what is called the Columbian Exchange. To non-Natives, this is an event characterized by the transfer of advanced European technology and

practices to the Americas in exchange for our land. They think of it as something like a gift, an act of supreme benevolence. Gratitude was and continues to be expected.

Back during the Columbus quincennial, one commentator wrote, in the *Ottawa Citizen*, that “whatever the problems it brought, the vilified western culture also brought undreamed-of benefits, without which most of today’s Indians would be infinitely poorer or not even alive.”

Non-Natives tend to exaggerate the difference between their cultures and Indigenous cultures, and they downplay the dynamism of Indigenous peoples. In a recent discussion about Native people on his popular podcast, Joe Rogan—who is, according to the *Guardian*, quite possibly “the world’s highest paid broadcaster”—said: “If no one came to America, if the world just stayed in Europe and Asia and the way it had been before Columbus and before the Pilgrims and all that shit, these people would probably still be living like that.... It’s incredible to think there were millions and millions of members of different tribes living in this country, basically like Stone Age people.”

These people are wrong for too many different reasons to count, but two stand out. The first is what exactly Europe brought to the table. Before 1492, the average English family lived in a

windowless shanty with dirt floors and a grass roof. They made their clothes at home and, when they weren’t starving, subsisted on a few domesticated animals and gruel for much of the year (there were some vegetables in the warmer months). Looking back at Wikipedia’s “Timeline of Historic Inventions,” in the decades preceding first contact, one of the greatest technological advancements in Europe was the button.

Non-Natives like to think that the *Mayflower* had Wi-Fi, that the *Niña*, the *Pinta*, and the *Santa María* brought with them consumer goods, Facebook, and nuclear medicine. In reality, they brought very little from Europe that Natives wanted beyond weapons and metalwork.

The second error non-Natives make when discussing the Columbian Exchange is in omitting what Indigenous peoples sent to Europe. They didn’t just get our land. What we sent in agricultural know-how was the key to the growth in the centuries that followed their arrival in our countries, raising them out from beneath their grass roofs and setting the stage for the world’s material development.

THE DEPARTMENT of Fisheries and Oceans swarms our fleet the next few days out on the river, looking for any little mistake in order to file charges. Video emerges on Native social media showing armed DFO officers fighting Native fishermen and going for their guns.

Their agents meet us onshore and try to trick us into selling to them. They do this with all the guile and subtlety of Inspector Clouseau, and no one falls for it. When that fails, they invent charges, claiming illegal nets are being used. DFO officers move against the captain of the fishing boat I was on. He is arrested for having caught fish illegally, his nets destroyed, and his catch thrown into the river; he is later sentenced to community service.

Again, another insult: that we don’t know how to manage our own resource. So they tell us when to fish, what to fish, how to fish, and why to fish. Within their narrow limits, we exercise our rights on a river named after us.

Among our catch is a sturgeon—two metres long and impressive looking, like the sturgeon that made up our first recorded trade with the xwelítem, the hungry people. Unfortunately, due to the DFO’s incompetence, our sturgeon are now nearly extinct, so once we are clear of the nets that trail behind the boats, we are forced to return it to the river. It jumps above the waves and then swims off. 🐟

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ROBERT JAGO is an entrepreneur, an occasional writer, and a member of the Kwantlen First Nation and Nooksack Indian Tribe. He is also the editor of *Terra Cognita* (thewalrus.ca/terra-cognita), a new Indigenous storytelling project.

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Dania, left, and Inti,
right, at our family
home in Toronto.

VISUAL ESSAY

Sisters

A complicated love story

TEXT AND PHOTOGRAPHY BY JAMILA NORITZ REYES

IN MY FAMILY, there are three of us, each born four years apart: Jamila, Inti, Dania. We've acted as witnesses to one another's lives, from early childhood to adolescence to, now, adulthood.

As the eldest, I've had the longest opportunity to observe all the ways our personalities have changed as childhood qualities are shed and new identities emerge. We are all very much alike at times—in our anxieties, in our responses to stress—but we are different people, and our relationships are not always equal. Inti and Dania, now twenty and sixteen, have a closer level of understanding: their bond is one that I admire, though I struggle to feel part of it. Recently, I've used my photography to examine our relationships and our upbringing. I want to piece together the causes and effects that have shaped who we are as individuals and as sisters.





There's an intimacy to sisterhood, one you can't find elsewhere. Since the three of us were very young, we've fought—it's what siblings do, and it never really ends. I had one such fallout with Inti last March, and the two of us stopped speaking entirely. It started out of those typical bad habits common between sisters: one takes the other's belongings without asking, lies when confronted. But conflicts among family are an accumulation, and this problem that at first seemed so small just snowballed. Ultimately, we shunned each other for eleven months—a feat, considering we live together. It was only this past February, toward the start of the pandemic, that we finally made amends. The reconnection, when it came, was instant. I could tell how much she'd been holding back by the amount of energy she exuded while sharing almost a year's worth of stories.

My sisters and I still live under the same roof in Toronto, but it's just a matter of time until I move away and build a life of my own. The kitchen will no longer be a place of reunion, where we meet to talk about our days, listen to music, or do our homework. I will miss my sisters' energy, feeling their presence as soon as I come through the door. But sisterhood is inseparable. Things will change; it's inevitable. Still, we will always find one another. ♣

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JAMILA NORITZ REYES is a photographer based in Toronto. Her work focuses on family dynamics, memory, and perceptions of reality.

Natural connection

Building a positive relationship with nature has never been more important. Research suggests that connecting with the natural world supports well-being and promotes personal happiness. Not only can getting outdoors help boost our own health, it can also motivate us to protect the country's green spaces, waterways and wildlife.

The Nature Conservancy of Canada (NCC) has a mission to inspire us all to safeguard and enjoy the natural world. As the nation's leading land conservation organization, NCC partners with individuals, corporations, Indigenous communities and governments to protect Canada's natural areas and help the country's treasured plants and wildlife thrive. Their work encourages others to join them in protecting the country's land and water systems by offering ways to connect with the natural environment.

Enjoying the world around us

doesn't have to mean hardcore backcountry camping (though that's an enjoyable option for some).

Anyone can appreciate nature by exploring city parks and green spaces, taking physical fitness routines to the great outdoors, volunteering outside, pursuing outdoor activities with family, and learning more about nature and wildlife through art, literature and the people that inspire us.

To help people understand their connection to nature, NCC created a quiz that shows what kind of activities might be most fun for different personalities. We challenged six famous Canadians to take it and, interestingly, they're all Next Level Naturalists, meaning nature plays a big role in their lives.

You may also find that enjoying the outdoors is a bigger part of your own life since the pandemic began. Whatever your relationship to the natural world, let's all continue to respect provincial health guidelines for travel and physical distancing.



Tom Jackson

Actor, singer, former chancellor of Trent University, officer of the Order of Canada.



Malindi Elmore

Track and field athlete, Olympian, current Canadian record holder for the marathon.

How do you connect with nature?

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Armchair Advocate

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Les Stroud

Creator and star of *Survivorman*, musician and author.



Denise Donlon

Business executive, author, member of the Order of Canada.



Jill Barber

Singer, songwriter, three-time Juno nominee.



Jesse Thistle

Author, professor, advocate for people experiencing homelessness.



Casual Cultivator

You've experienced the benefits of nature. Sometimes life just gets in the way, making it tougher to connect.



Next Level Naturalist

You take "nature lover" to a whole new level. From daily routines to your sense of self, the natural world plays a central role in your life.



Great Big Naturalist

Séan McCann, founder of the band Great Big Sea, scored as a Next Level Naturalist on the Nature Quiz. No surprises there: McCann loves being outside. A member of the Order of Canada, McCann recently returned from a 100-mile hike on the Grand Enchantment Trail in Arizona with his friend, Olympian and fellow mental health advocate Clara Hughes. Not all of his outings in nature are this extreme, however. McCann, who grew up in Newfoundland, credits his East Coast upbringing for his love of nature. "Being outdoors is in my DNA. We spent so much time outdoors just roaming around. That way of life has stayed with me," he says. Today, McCann spends time outside with his family and two dogs, whether out hiking or going on his daily run. He also loves sea kayaking. "I'm committed to nature and it's always going to be a part of my daily life," he says. "It's a gift that has real power to help us if we let it. We just have to remember it's as easy as walking out the door."

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DRAMATIC SWIRLS OF white thread bind rain-soaked clouds, bolts of blue and green trap intense winds, and atmospheric pressure fluctuates moodily on pearly-grey linen. Running stitches patiently over her hand-painted fabrics, Vancouver-based artist Bettina Matzkuhn brings a sense of stillness to something ever changing. Matzkuhn's series *Weathering* includes a collection of shifting weather patterns and climate phenomena embroidered onto twelve vibrant textile pieces all shaped like butterflies; the resulting kaleidoscope of fabric is called *Schmetterlinge*, the German word for butterflies.

For Matzkuhn, the elaborate work is a way to slow down and document the world as it changes around her. "The glacial pace of embroidery suits me,"

FEATURED ARTIST

Eye of the Needle

Bettina Matzkuhn maps the weather one stitch at a time

BY ABI HAYWARD

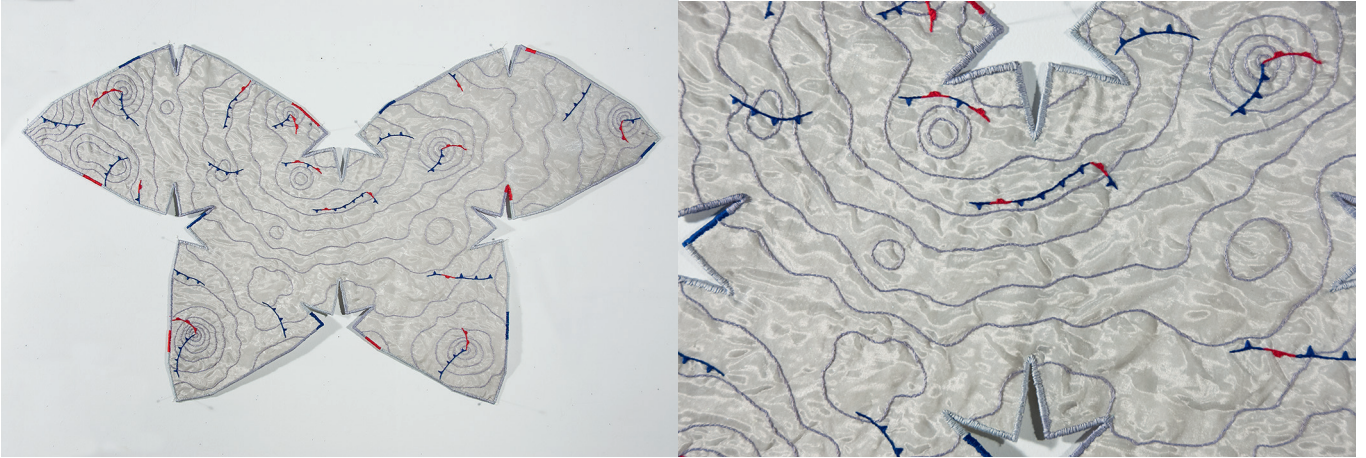
she says. "It's like thinking with your hands." Each piece might take weeks to complete. With a needle and thread, Matzkuhn is trying to understand, worry about, and celebrate our natural systems.

Matzkuhn first learned to read the weather from her father, a refugee from East Germany, in the sixties. The textile artist practically grew up on a boat,

going sailing with her family every weekend in British Columbia. She also learned how to connect what was on a map with what was in front of her. She understood, for example, that the narrowing contour lines on a topographic map signalled steep mountains ahead. Geography became the context for how she saw the world, and she's been exploring the science with her art ever since.

At age ten, she embroidered a cross-section of Canada onto the strap of her guitar—a journey from the Atlantic Ocean, across the flat expanse of the Prairies, to the forest-carpeted mountains of BC. After studying art at Camosun College, in Victoria, in the seventies, she made several experimental films for the National Film Board, using animation to bring her tapestries and textiles to life and to record





Matzkuhn used paint and embroidery to create each *Schmetterling*. The pieces are based on a type of map known as the Waterman butterfly projection.

her ocean-going childhood. At forty, she sewed scenes from a 2,300-kilometre solo bike trip, from BC to the Yukon, onto a spool of cloth. Then, in her mid-fifties, she embroidered four sets of twelve-foot sails as a memorial to her seafaring father.

Just as her father had unravelled the mysteries of the winds in a boat's sails, meteorologist Uwe Gramann helped Matzkuhn decipher the language of meteorology for *Weathering*. Matzkuhn gave Gramann a textile piece depicting a cumulonimbus cloud (or a thundercloud) as a thank you for a crash course on weather maps. One of the resources Gramann shared with her was the online data visualization that inspired

"The glacial pace of embroidery suits me,"
Matzkuhn says.
"It's like thinking with your hands."

Schmetterlinge to take flight: a series of differently shaped maps displaying data such as wind speed, temperature, precipitation, and carbon dioxide. One of them was the Waterman butterfly projection—an update to the Cahill butterfly projection that seeks to display the world without distorting the shapes of its continents. The map is shaped like a butterfly, but sewing its edges together turns it into a polyhedron, a three-dimensional representation of Earth.

As soon as Matzkuhn saw the projection, she thought of the Victorian craze

for collecting impaled butterflies in cabinets. "The world is fragile," she says, reflecting on *Schmetterlinge*.

On hiking trips, Matzkuhn has noticed glaciers receding, seen cedars turning brown from drought, watched the spread of the tree-killing mountain pine beetle, and breathed the smoke of worsening wild-

fires—all effects of climate change in BC. In a world increasingly defined by climate emergencies and a public health crisis, understanding our impact on the planet can feel complicated. Matzkuhn's work encourages us to take the time to linger and to wonder about our fragile world—piece by piece, with careful hands. 🦋

.....
ABI HAYWARD is the former Ross/Gordey fellow at The Walrus. She is currently the assistant editor at *Canadian Geographic*.

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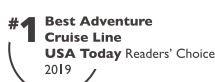
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MEMOIR

Not Recommended

What columnists have lost in the age of algorithms

BY RUSSELL SMITH

ILLUSTRATION BY SAM ISLAND

LAST NOVEMBER, I stopped writing a regular column on art and culture for the *Globe and Mail*, my job for almost twenty years. Nobody noticed. I did not receive a single reader's letter. I had a polite message from my section editor. He was sorry things didn't work out and hoped we could stay in touch. The note contained no sense of symbolic occasion. I knew what I did was no longer important, either to the national culture or to the newspaper's bottom line.

To be fair, my columns explored aesthetic topics newspapers typically avoided. I opted not to weigh in very often on big moral questions of race and gender. I didn't cover Roman Polanski's

child-rape charges, for example, or Jian Ghomeshi's trial for sexual assault. Instead, I steered readers toward controversies that weren't headline news. I was drawn to the language used to discuss religion on Al Jazeera. I analyzed American Apparel's "anti-brand" marketing campaigns. I dismissed pop music as the most conservative art form in existence. Creative tropes, I believed, were political in unpredictable ways and just as important to our intellectual landscape as the left/right punditry dailies usually traffic in. When Alice Walker published an antisemitic poem, I didn't talk about antisemitism but instead explored the poem's similarity—along with much new verse—to a Twitter thread.

For a while, it worked. My column netted me invitations to TV news shows. I was asked to speak at conferences on new music and editing. I made enemies too. When I called school spirit anti-intellectual, dozens of students at Queen's University protested, either by letter or video. Indeed, triggering furious responses seemed my forte. The fiction writer Rebecca Rosenblum wrote, in *Canadian Notes & Queries*, that my columns were "about starting a fight."

But, several years ago, I began to worry my readership was falling off. I would run into middle-aged people at functions and they would say, "I miss reading you in the *Globe!*" and I would say, "I'm still there, weekly, in the arts section," and they would say, "Ah, I get it on my phone, and you don't come up on the app." Out in Halifax, my mother couldn't read me anymore after the *Globe* stopped offering a paper edition in the Atlantic provinces, in 2017. I taught graduate students in writing, and I had given up on expecting them to know I wrote for a national daily. They rarely seemed to read newspapers, and certainly not that one.

My increasing feelings of irrelevance also came with a corresponding pressure to cover what, for me, were the less and less interesting topics that my editors felt would be better at maintaining my impact—general-interest arts stories and mainstream popular culture. That pressure, I felt, came largely from the huge moving electronic graph that now hangs over most newsrooms, tracking the articles causing the most reader interest in real time.

Today, I see my two-decade career as an allegory of how the digital age—and especially its omnipresent "metrics"—has changed what we read. I wanted to open the doors to private clubs. But, at a certain point, it became clear that no one wanted to walk through anymore.

IPITCHED the column in 1999, maybe the only time something so unabashedly highbrow could have been conceived for newsprint. The *National Post* had just launched, and we were in the throes of a newspaper war. The *Post* was irreverent and colourful. Its style was

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reminiscent of British papers, in which wit was as valuable as investigative scoops. It loved quirky copy. It had more illustrations. Its cartoons were funnier. Suddenly, our national newspaper looked staid.

The owners of the *Globe* responded by bringing in a publisher battle-hardened in the trenches of the highly competitive UK newspaper market. He brought in a British editor-in-chief. Forty-three at the time, Richard Addis had an affable private-school charm and began recruiting writers as much for their glamour as for their journalism. Over lunch, I told him I wanted my focus to be international and intellectual. I told him I would be the bridge between suburban Canada and the violent paganism of Norwegian black metal. I made it clear I wouldn't touch mainstream culture—no pop music, no celebrities, no Hollywood movies.

He smiled and told me to start in a week. I was soon joined by Leah McLaren, who began to chronicle her life as a young woman in the city—a life almost completely unrepresented in the old and male newspaper at that time. Lynn Crosbie also signed up to write a column about celebrity culture, in which she used a densely literary style to compare people like Britney Spears to heroes of classical mythology. All of a sudden, Canadian newspapers were sexier—less sober, less policy focused, less Canadian.

The economic crash of 2008 changed everything. Print sales were sinking. Freelancers writing for dailies feared the collapse would take them down too. I had no contract, no security. I was invoicing every week for \$800. My editor at that time, Andrew Gorham, told me that I had to take a pay cut of \$100 per week. I was spending a day on the column and filling the rest of the week with other freelance work to pay my rent. I could take it or leave it. I took it.

In 2010, the waves of departures started. In 2013, sixty *Globe* employees took buyout offers. In 2014, eighteen positions were cut, including nine editorial jobs. In 2016, the publisher announced he was looking for forty staffers to take voluntary buyouts. Three years later, \$10 million in labour costs needed to be cut, which led to more buyouts. (Gorham

took one last year.) Lucky to still have any regular pay, I stuck at it. I outlasted four editors-in-chief and nine section editors.

My beat probably helped me survive. Both at the *Globe* and across Canada, there wasn't a lot of competition for what I was doing. I was providing a lot of content—content that helped maintain the paper's literary brand—for very cheap. But a new arts editor, who came on board around 2016, displayed increasing concern for me. My guess, based on all his talk about "engagement," was that he was getting pressure from management about my weak numbers. The *Globe* had, by then, developed Sophi, its own analytic software. Sophi tallies how much of an article is read, how many times it is shared and commented on, and most importantly, whether it being behind a pay-wall spurs anyone to buy a subscription.

Articles that show low engagement typically get sidelined in favour of pieces that show more, a measurement that, along with all of the above, takes into account the click-through rate, or CTR. "You're looking at your analytics," Gorham explained to me, "and you're saying, Holy shit, this story's got a high CTR, let's move it forward. Surface it—share it on Facebook, put it on the home page, release a news alert, put it in the newsletter." That support is key to keeping engagement up. "If we don't juice it," he said, "it just evaporates."

In practice, this ensures the less read become even less read. It creates what one might call popularity polarization: a few pieces rise to the top, leaving the rest to fend for themselves. With print, this didn't happen as much. Flipping pages, you would see every article somewhere. But, on your phone, you scroll through what's been selected for you. And that selection likely reflects a ruthless narrowing of editorial values and priorities. "You don't try to do everything for everyone," is how Gorham described it. "It's all about swinging for the fences. Don't hit singles, don't play small ball. You pick your one and you hit it hard." For the *Globe*, it meant more resources going to major, socially relevant projects, such as *Unfounded*, Robyn Doolittle's two-year investigation into unprosecuted sexual assaults.

My clever musings on the relevance of the opera *Don Giovanni* in the age of #MeToo were not exactly "big" in that sense. But I still believed that a newspaper can and should cover both sexual assault and the arts. If I wanted to keep writing, I needed to push my numbers up.

So, last summer, I paid several visits to the *Globe*'s gleaming new offices to chat with my boss about what I might do. I saw what a contemporary newsroom looks like. If you walk the full floor of the *Globe*, you'll see, along the pillars, five or six big screens; even the coffee area has two of them. These are Sophi's HUDs, the head-up displays of the huge brain. Featuring a graph with moving lines, each screen shows engagement, in real time, with the stories currently on the paper's website. The top line is usually breaking Canadian news: the Fort McMurray fires, say, or the shooting on Parliament Hill. The more provocative political-opinion writers might constitute the second line. I was here to see if my 1,500-word feuilletons on machine art in Hamburg or new internet slang could break into those rankings.

That idea of engagement, however, made my heart race. It wasn't at all what connecting with readers used to mean to me. If my ideas were being discussed in academic papers, if I was giving bloggers strokes, if I was annoying the powers that be at Heritage Canada or in the upper floors of the CBC, that, to me, was engagement. That was how I measured my influence on the culture. But one thing that Sophi does not weight differently is readers. All readers are effectively the same: a click is a click, whether it comes from your mouse or from Margaret Atwood's. So Sophi cannot measure engagement in my twentieth-century sense.

My editor suggested a new focus. Would I like to be a weekly books columnist? Of course, there was no extra money. I tried for a few months, but my reading couldn't keep up with the deadlines. My editor relented and allow me to expand my scope and cover varied arts subjects—as long as they were Canadian. According to Sophi, Canadian subjects got the most engagement. Maybe so, but the issues I was interested in—the influence of technology

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on art or the echoing of long-vanished art schools—were mostly playing out on an international stage; I couldn't find enough examples of these things from Canada alone. I feared that, if I had to write about only Canada, I would end up with the do-goody stuff the CBC is stuck with: the short-list for a Responsible Fiction prize or a play about fighting transphobia in Edmonton, not the glamour of a rude French novelist or a noise-and-sex festival in Tokyo.

The week we were negotiating, an international arts scandal exploded: the Nobel Prize in Literature was awarded to Peter Handke, an apologist for Slobodan Milošević, Serbia's former strongman who was tried for genocide in the wake of the Yugoslav Wars. Condemnation dominated arts news and blogs around the world. It was exactly the sort of thing I would have been asked to do a hot take on. But my editor confirmed that they weren't assigning it to anyone. The outrage, I gathered, wasn't Canadian enough to merit comment. It was at that point I realized there was no longer a role for me.

MOST MAJOR news outlets in Canada share the conviction that their primary arts focus should be Canadian. After all, foreign papers won't cover that play in Edmonton. Also, people no longer turn to one journal for information. If they want to read up on an international controversy, they have their pick of brilliant critics in *The New Yorker*, the *Guardian*, and hundreds of blogs and podcasts, all streaming to their phones, often for free. The web, in other words, is awash in opinion. Once I went behind a paywall, even my friends moved on. They can read Hilton Als, Jerry Saltz, and A. O. Scott any time they want.

One could argue that, given the easy access to international opinion, a Canadian viewpoint is even more vital. Why not stake out a role as one of a handful of commentators on homegrown art? Well, there's a paradox in the local-only approach: Canadian artists are not isolationists. They want a show in New York as much as anyone. They readily accept residencies in Stockholm and New Zealand. Ask a Canadian composer her biggest influence and she is just as likely to drop

an American or Japanese name as a Canadian one. It strikes me, then, as simple-minded to think that covering only the arts that exist within our borders is to actually cover our arts. Our arts are international. So, if a newspaper is national, it must be international as well, just as our artists are.

I don't mean to propose that my disappearance should be cause for concern. I had a good run. But I worry about analytics driving editorial decisions. Most media outlets (including *The Walrus*) pay close attention to what generates traffic—any journal that doesn't is likely to fail. But trusting that data to curate content is another matter: algorithms that tell us which topics are trending don't merely reflect trends; they can also help create them. In winnowing out the slightly obscure or difficult, algorithms ensure it can never be popular. If no one is ever told that electronic music or postmodern architecture are significant topics, then those things have a reduced chance of being treated as significant. The newspaper's role as arbiter is diminished. Simply put, if your metrics tell you the provincial is the most important thing, your journal will likely become provincial. In trying to be "bigger," you can get smaller too.

It became clear to me that I hadn't been read by my peers for quite a while. It is quite possible that interest in the intellectual had tailed off in the population at large, but I find that hard to believe. The internet has shown us that the oddest of subcultures and smallest of niches can develop followings. The reading I come across in my social media feeds now is, in fact, more cerebral than ever. The great papers of the world still seem to want to participate in the conversations academics and underground artists are having.

No, I don't think readers weren't interested. It's that they were told not to be interested. The algorithms had already decided my subjects were not breaking news. Those algorithms then ensured that they would never be. When I took my final bow, the room was already empty. ♪

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RUSSELL SMITH is the author of nine books and has been nominated for the Trillium Prize, the Governor General's Award, and the Giller Prize.



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FIRST PERSON

My Other Mother

My nanny helped raise me. Now it's time for me to get to know her children

BY WILLIAM PANG

“**W**HAT DID YOU know about me when you were young?” I asked Angel. The question had been on my mind for years.

“That she took care of you day and night,” Angel replied.

I smiled awkwardly, not quite sure what to say. Growing up in Hong Kong, I'd had all the love and attention from Angel's mother, my former live-in nanny, that a child could expect, whereas Angel saw her mother for only three weeks a year, when her mother would fly home to the Philippines.

I'd thought that, after my nanny retired, she would finally get to parent her own children. But, when I visited Auntie Zeny's house, last December, I was surprised to see that her living room was plastered with relics from my childhood, including a foam Mufasa with its head half severed and a stained Santa Claus refrigerator magnet that used to hang on our fridge door.

Her real name is Zenaída Bantugon, but my family always called her Auntie Zeny. She started taking care of me when I was born, and she stayed with my family for over fifteen years. Back then, both my parents had careers and worked long hours, so whether it was changing diapers, picking me up from school, or steaming fish Chinese style, Auntie Zeny had to do it mostly by herself. The only time she took off, aside from her annual vacation, was on Sundays, when she would put on makeup, douse herself in perfume, and head to church.

Despite the time Auntie Zeny and I spent together, she wasn't family. For



one, we were rarely in the same room with my mom and dad. Auntie Zeny did not join us for meals, eating instead in the kitchen, at a small table affixed to the washing machine. I remember lingering around the kitchen and wondering why she ate alone. She would smile and motion me back to the dining room. *They are your parents; I am not*, was the point she seemingly wanted to make clear.

At the time, it was hard to think of her as anything but a mother, one who was solely mine. Although I vaguely knew that she had several children, I couldn't be bothered to ask about them; she was, as Angel said, with *me* day and night. In the hours before my parents came home from work, Auntie Zeny would take the chopping boards to the dining table and listen to me complain about classmates, friends, and homework as she worked her way through the choy sum and gai lan—vegetables she knew I liked. Looking back, all I can imagine are her four kids crowded around the phone, fighting to hear their mother's voice once a week, knowing the international calling card could expire any minute and cut them off.

The rare times I saw her acts of love for these faraway children were during

our monthly trips to a Western Union branch—where I remember whining about the wait as Auntie Zeny stood in line, chequebook in hand—or whenever I watched her seal a shipping box overstuffed with soaps, snacks, and other sundries to send home.

When I visited Auntie Zeny over the holidays, I also met some of her kids, now grown up. I had expected to be greeted with animosity, perhaps due to my lingering guilt for having taken time away from their mom for all those years. To my relief, they spoiled me, serving me big portions at every shared meal—the love language of Filipinos—and surveilling my bowls of stir-fry noodles to make sure I was ready for seconds.

This past January, I flew to Alberta, where Angel now lives, to get to know her a bit better. She'd spent a few years living with my family in Hong Kong, starting when I was a kid and she was in her twenties. But I'd never really understood how she and her siblings related to their mother after spending so much time apart. Nor do I think I will ever truly grasp what they had to go through without Auntie Zeny by their side.

As Angel and I talked, I could see that, as a mother, she was determined to spend every moment at the side of her two playful boys. It reminded me of Auntie Zeny's propensity to share love unconditionally. ♥

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WILLIAM PANG is a writer based in Montreal. His work has been published in the *Globe and Mail* and the *Toronto Star*.

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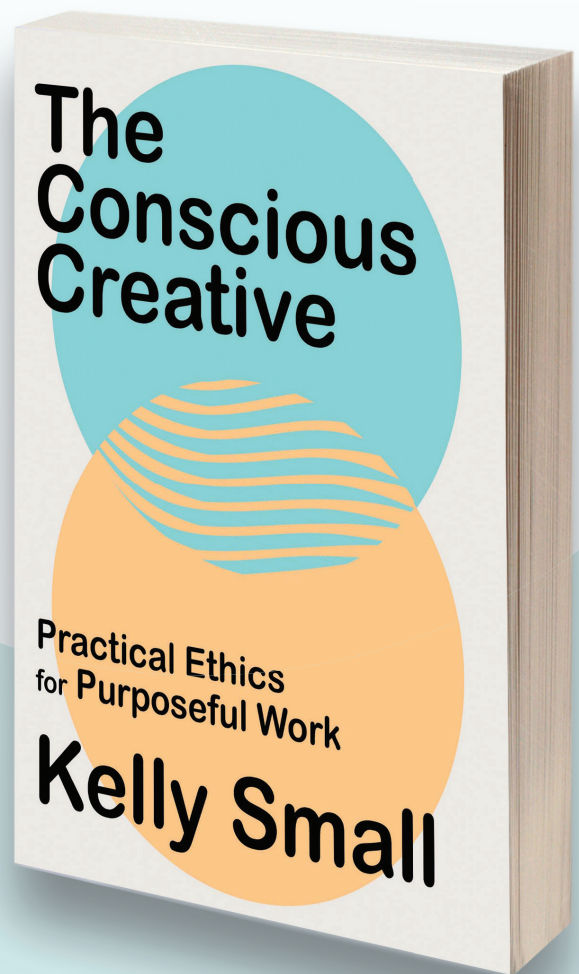
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